



AWARN Alliance Membership Invitation for 2017

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Dear Technology Innovator,

Please accept our invitation to join fellow industry leaders in the Advanced Warning and Response Network (AWARN) Alliance for 2017.

This new Alliance of leading broadcasters, consumer electronics and other allied technology companies, and public safety organizations has made considerable strides already. By pioneering advanced alerting using ATSC 3.0, we also are prototyping new business applications for Next Generation Television. And we're playing a leading role in securing FCC approval for voluntary transmission of ATSC 3.0

In 2017, we will build on our success by supporting ATSC 3.0 pilot stations, convening public safety user groups, creating scalable next-gen alerting templates, and identifying potential business partners to build out AWARN and the ATSC 3.0 ecosystem. Promoting voluntary adoption of ATSC 3.0 receivers on mobile devices and supporting favorable rules at the FCC remain goals as well. Please see the enclosed prospectus for details.

To achieve the true potential of AWARN and ATSC 3.0, we need your support. Developing AWARN is a major common goal that can rally our entire industry in the post-auction environment, and I hope you will be a part of it.

Any of our current Alliance members, as well as my colleague Fiona James and I, would welcome a call with you to discuss membership in the Alliance. One of us will reach out to you in the days ahead, or please contact us if you have any questions.

Sincerely,

John M. Lawson
Executive Director



An Alliance to Build ATSC 3.0 Advanced Emergency Alerting

Strategic Mission

The mission of the Advanced Warning and Response Network (AWARN) Alliance is straightforward: leverage the unique capabilities of the Next Generation Television standard (ATSC 3.0) and terrestrial television broadcasting to dramatically upgrade America's emergency alerting system. Our goal is to save lives before and during emergencies and accelerate recovery afterwards. By pioneering advanced alerts, AWARN also will prototype core business enhancements and new service offerings of the Next Generation Television business model.

Focus for CY 2017

- Develop beta versions of lightweight, scalable, AWARN templates that can be easily adapted by ATSC 3.0 broadcasters, alert originators, and CE device makers.
- Recruit and manage alert originator user groups, in cooperation with the FEMA IPAWS Lab, NOAA/NWS, APCO, IJIS, NEMA, *et al* to develop protocols and workflows
- Organize collaboration among Alliance members, the ATSC I-Team, and other partners to achieve objectives.
- Through RFI's or other outreach, identify interest from potential business partners in developing the Next Generation Television ecosystem through AWARN.
- Coalesce partners to stand up AWARN pilot projects at early adopter ATSC 3.0 stations.
- Promote voluntary adoption of ATSC 3.0 receivers in mobile devices to ensure that broadcasters' mobile video services can reach consumers anytime, anywhere.
- Provide policy and political support for timely FCC adoption of rules to authorize permissive use of the Next Generation TV standard (per the *Joint Petition*).
- Preempt burdensome regulations being added during the FCC's ATSC 3.0 rulemaking or proceedings to upgrade the legacy EAS.

Member Benefits

- Inform your own planning for ATSC 3.0 conversion by gaining knowledge at the forefront of ATSC 3.0 deployment of new services, facilities, and TV channel repacking.
- Join a cross-disciplinary team of ATSC 3.0 engineers, broadcasting, consumer electronics, and allied industry executives, and government affairs professionals.

- Participate in testbeds and pilot projects to prepare for your ATSC 3.0 launch.
- Create AWARN templates for easy adoption by stations and partners.
- Prototype core business enhancements and new ATSC 3.0 services that promise major financial upsides for broadcasters.
- Renew your stations' cornerstone public service to a 21st Century America.
- Gain a powerful argument to support your local, state, and federal regulatory case.
- Take a seat at the table for determining the evolution of AWARN and the Alliance.
- Help ensure that your stations' ATSC 3.0 signal can be received on smartphones, home gateways, and other consumer devices.

Alliance Gains to Date (Through Q3 2016)

- Completed AWARN Amber Alert demo and template with National Center for Missing and Exploited Children, WJLA, LG/Zenith, and Triveni Digital.
- Tornado, Hazardous Materials, and Active Shooter demos are in production.
- Signatory to *Joint Petition for Rulemaking Seeking To Authorize Permissive Use Of The "Next Generation Television" Standard*.
- Through LG, SBG, WRAL, Triveni, Monroe, *et al*, demonstrated first live AWARN alert using ATSC 3.0 broadcasting at NAB Show 2016.
- Began scheduling public safety officials to visit SBG's Next Generation Television Living Room at WJLA, which will include AWARN demos.
- Built policy support with FCC, FEMA, and key Members of Congress.
- Gained official recognition in the CSRIC V Advisory Committee Report to the FCC.
- Earned frequent trade press coverage and conference sessions on benefits of AWARN.

Structure and Dues Levels

The Alliance is managed as an informal not-for-profit coalition under contract with Convergence Services, Inc. and John Lawson as Executive Director. Members will determine the governance structure moving forward.

Anchor Tenants ¹	\$37,500
TV Broadcast Groups - Large	25,000
TV Broadcast Groups - Small	10,000
Tech Partners	10,000
Tech Partners – With Discount for In-Kind Support	5,000
Individual Public Television Stations ²	2,500
Law, Engineering, Consulting Firms	5,000
Public Safety Agencies ³	No cost

¹ Currently LG Electronics/Zenith, NAB, Pearl TV, and Sinclair Broadcast Group/ONE Media

² Group rates available for public media affinity organizations

³ Governmental or philanthropic funding may be sought to support public safety involvement



Advanced Public Safety Communications Using Next-Gen TV

- Geo-targeted, instant, rich media alerting to millions
- Video, storm tracks, evacuation routes, flood maps
- High reliability, even when cell networks and power grids are down
- Mobile, deep indoor reception
- Device wake up capability



AWARN.org

The AWARN Alliance



Open mike by John M. Lawson

AWARN Alerting: An ATSC 3.0 Business Model

By John M. Lawson

TVNewsCheck, October 27, 2016 5:40 AM EDT

Financial models project major upsides from broadcaster adoption of the next-generation television transmission standard, also known as ATSC 3.0. Increased revenue derives from enhancements to broadcasters' core business, as well new services. Ironically, a new public service enabled by Next Gen TV — the [Advanced Warning and Response Network \(AWARN\)](#) — is becoming the test bed for some of the same innovations that will give broadcasters a new competitive advantage in the media marketplace.

When we launched AWARN development, we believed that ATSC 3.0 would revolutionize emergency alerting. We soon realized that AWARN also could lead the way for new commercial applications for 3.0. That's because AWARN will be the first out-of-the-gate service that utilizes many of the key capabilities of 3.0, including: device "wake up," geo-targeting, robust indoor reception, interactivity, mobile video, and datacasting. Advanced emergency alerting itself is one of the core "use cases" for the new standard.

The [AWARN Alliance](#), a coalition of broadcasters and tech companies, has come together to develop and deploy the service. The alliance has just completed its first 3.0 prototype, a rich-media Amber Alert. Tornado, hazardous material, and active shooter alert demos are in production. We begin demonstrating these prototypes next month.

The Next-Gen Amber Alert

Leapfrogging the current 90-character Wireless Emergency Alert (WEA) and the legacy Emergency Alert System, the advanced Amber Alert can serve as a prototype for a range of new 3.0 services.

Amber AWARN Alerts will provide geo-targeted, rich-media content that consumers can instantly access at their choosing, including pictures of the missing child and alleged abductor (if available), images of the make, model, and color of the getaway car, a facsimile of the license plate, and maps indicating last seen location and direction of the car. Local stations can insert their own news clips if they choose.

The wireless industry's network architecture is not designed for rich-media, interactive messages, and the carriers have fought FCC requirements to add them to WEAs. Next-gen TV broadcasters can incorporate these features with a minimal commitment of bandwidth.

Test Bed For ATSC 3.0 Services

In the ATSC 3.0 standard, the Physical Layer's "bootstrap" serves as the universal entry point that allows all receive devices to process and decode information, and it carries the bits that can wake up devices. This capability has obvious importance when disaster strikes, especially during off-hours.

AWARN also leverages other 3.0 capabilities that are essential for the Next Gen TV business model.

Geo-targeting is highly important for alerting. It reduces the problem of over-alerting, which leads to complacency when real danger approaches. It also eliminates the need for TV station personnel to make the agonizing call to run or not run an alert that only affects a subset of its viewers but which would interrupt programming for everyone.

Geo-targeting is also a key to higher TV advertising revenue. Along with demographically-targeted ads, "zoned"

ads create sales opportunities for customers who many not want or need to reach the whole DMA. With 3.0, the broadcaster will have the bandwidth to transmit any number of zoned ads simultaneously, perhaps at higher CPMs because of their efficiency.

Signal robustness will bring back deep indoor reception for fixed and handheld devices. This capability is extremely important for getting urgent alerts to all members of the family, including teens like mine playing online video games with headphones in the basement.

Robustness also has major potential to accelerate cord-cutting and bring back over-the-air (OTA) viewership. New “home gateway” products will receive 3.0 signals indoors, marry them with existing broadband in the home, and retransmit the combined content to any WiFi-enabled devices within the home. Growth in OTA viewership drives audience share for local stations, which in turn shifts local ad revenue from MVPDs to the stations. This shift more than offsets the loss of cable subs and retransmission fees, according to financial analysis.

Interactivity solves a major challenge of current alerting. Social science tells us that providing too little information in an emergency leads to “milling,” in which people delay taking action as they search for more information or confirmation. Giving them too much information also leads to confusion and delay.

With AWARN, every device in the danger zone receives a banner alert, while rich-media elements, such as storm tracks or evacuation routes, are downloaded from the TV signal in the background, accessible as needed through an on-screen menu.

Interactivity also is the key to certain Next Gen TV business models. Non real-time media elements can be downloaded along with a program from the ATSC 3.0 signal, which will allow viewers to interact with those elements on their device offline. Or they can interact with online content available through the hybrid broadcast-broadband network, or both.

Mobile video is a core feature of 3.0 that has enormous implications for both emergency communications and the future of broadcast television.

The use of a WEA as a “Wanted” poster in the recent New York and New Jersey bombings generated headlines and illustrated both the power of mobile alerting and the limitations of WEAs. Where the WEA could only give the suspected bomber’s age, gender, and name and direct citizens to “see media for pic,” AWARN can instantaneously deliver the suspect’s actual “pic,” plus surveillance video, maps, safety instructions, and one-click links to report sightings.

The commercial potential of Next Gen TV mobile services is enormous. While infrastructure costs are higher, a study commissioned by Pearl TV estimated the increased revenue from mobile video at up to \$4.78 billion annually ([“ATSC 3.0 Seen Delivering Economic Boon,” TVNewsCheck, Nov. 12, 2015](#)).

Datacasting is another powerful “dual-use” tool. IP-encapsulation of EAS alerts using ATSC was pioneered by the Association of Public Television Stations and FEMA in the mid-2000s. AWARN takes it to whole new level, sending a wide range of non-real-time files to an infinite number of receive devices. All of this content can be downloaded to devices using the TV airwaves.

In commercial models, broadcasters can use 3.0 datacasting for “forward and store” applications, such as popular pay-per-view movies. Machine-to-machine software upgrades in the Internet of Things can be “off-loaded” from other networks very economically through Next Gen TV. Financial modeling commissioned by [Convergence Services, Inc.](#) for an East Coast PBS station, using only a fraction of its bandwidth under FCC rules, could generate nearly \$6 million a year in new revenue by 2022.

AWARN also will pioneer the use of other capabilities of 3.0, including accessibility and personalization.

A Familiar Pathway For Innovation

Historically, public safety or military technologies have led to successful commercial products. For example, location awareness technology, eventually GPS, was added to cellphones not through market forces but because of FCC rules in the late 1990s, meant to ensure that 911 dispatchers could determine the position of distressed callers.

Wells Fargo Securities equities analyst Marci Ryvicker, commenting at the [Smart Spectrum Summit](#) last November, said AWARN was important to the business future of broadcasting because it would be a “real world” demonstration of the power of 3.0 that investors could understand. We think she’s right: nothing is more “real” than providing information when and where people need it to save their lives.

Smart Strategy

Supporting AWARN provides other benefits for broadcasters. As Hearst Television President Jordan Wertlieb [wrote earlier this month](#) in the wake of Hurricane Matthew, advanced alerting with 3.0 offers the opportunity for broadcasters to upgrade their communications lifeline to their communities.

FCC Commissioner Ajit Pai [has cited](#) advanced alerting as a major reason that the commission should act to allow the voluntary transmission of Next Gen TV.

AWARN also can hasten the day that broadcasters’ signals can be received on smartphones. The AWARN Alliance does not advocate an ATSC 3.0 “tuner mandate,” but advanced alerting will create a powerful consumer demand that even the wireless carriers cannot ignore. It also can solve a problem for the wireless carriers, which have said the FCC’s timeline for upgrading WEAs is “[technically unrealistic](#).”

AWARN Alliance Plans For 2017

The [AWARN Alliance](#) was launched earlier this year with the support of LG Electronics and its Zenith R&D Lab, the Pearl TV joint venture, NAB, PBS, Sinclair Broadcast Group and its ONE Media joint venture, WRAL/Capitol Broadcasting and technology companies Triveni Digital, Monroe Electronics and GatesAir. The alliance was a signatory — along with NAB, America’s Public Television Stations and the Consumer Technology Association — to the April Joint Petition asking the FCC to allow broadcasters to begin the voluntary transmission of ATSC 3.0.

In 2017, we aim to stand up “user groups” with public safety officials and broadcasters to operationalize AWARN in time for the commercial and public television launch of 3.0. We invite all broadcasters and allied industries to join us in developing AWARN and paving the way for Next Gen TV.

John Lawson is executive director of the [AWARN Alliance](#) and is president of [Convergence Services Inc.](#), a strategic consulting firm. Contact him at jlawson@awarn.org; 703-347-7070

What is AWARN

— and — Why Do You Need It?

1



Advanced Warning and Response Network (AWARN)

Revolutionary upgrade to U.S.
emergency communications.

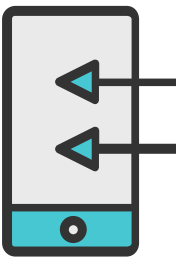
2



Prototyping ATSC 3.0 Business Models

Geo-targeting, personalization, interactivity,
and hybrid networks for all-IP Next Gen TV.

3



Powerful Driver of Mobile Video

Consumers will demand
AWARN on all devices.

4



AWARN Alliance

A community of broadcasters, tech
companies, and public safety.

5



*You Participate in a
New Growth Industry!*



Positions You

As a thought leader in
the tech industry

For your 2017 AWARN Alliance
Membership Invitation Kit, [click here](#).

[AWARN.org](#)



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