

Before the  
**Federal Communications Commission**  
Washington, DC 20554

In the Matter of:	)	
	)	
Authorization of Next Generation TV	)	GN Docket No. 16-142
For Permissive Use as a Television Standard	)	
	)	
	)	
	)	

**COMMENTS IN SUPPORT OF JOINT PETITION FOR RULEMAKING**

Public Media Company (“PMC”),<sup>1</sup> Michigan State University (“MSU”),<sup>2</sup> Detroit Public Television (“DPTV”)<sup>3</sup> and Kentucky Authority for Educational Television (“KET”)<sup>4</sup> (collectively, the “Commenters”) submit these comments in support of the Joint Petition for

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<sup>1</sup> Public Media Company is a national non-profit strategic consulting company that fosters public media growth. Public Media Company was founded in 2001 as a 501(c)(3) for the purpose of strengthening and expanding public broadcasting services in communities nationwide so that people have greater program choices for in-depth information; national, regional and local news; diverse music and cultural programming. Public Media Company has advised more than 300 public television and radio stations and organizations on business plans, acquisitions, and other initiatives that drive innovative, sustainable public media growth. In 2014, Public Media Company broadened its mission to include the execution of collaborative partnerships like VuHaus (a music video site run in partnership with 10 public radio stations) and Channel X, a video content exchange for sharing and licensing independent news and programming for broadcast and digital delivery.

<sup>2</sup> Michigan State University, one of the leading universities in the country, is the licensee of noncommercial television station WKAR-TV, East Lansing, Michigan.

<sup>3</sup> Detroit Educational Television Foundation, dba Detroit Public Television, is the licensee of noncommercial television station WTVS, Detroit, Michigan.

<sup>4</sup> Kentucky Authority for Educational Television Network is a network of 16 educational television stations in Kentucky and one of the preeminent educational television networks in the country.

Rulemaking (“Joint Petition”) filed by America’s Public Television Stations (“APTS”), the AWARN Alliance, The Consumer Technology Association (“CTA”) and the National Association of Broadcasters (“NAB”).

The Joint Petition asks the Commission to permit TV broadcasters to begin using the physical layer of the ATSC 3.0 (“Next Generation TV” or “3.0”) standard on a voluntary basis by: (1) approving the 3.0 transmission standard as an optional standard for television broadcasting; (2) amending certain rules to enable 3.0 to be deployed; and (3) specifying that 3.0 transmissions are “television broadcasting” in parity with DTV transmissions.

The Commenters enthusiastically support the Joint Petition and each of its requests. It is noteworthy that the joint petitioners represent diverse interests of the consumer electronics industry and of commercial and noncommercial broadcasting. This diversity of representation illustrates the broad appeal of Next Generation television to the industry generally. For reasons that follow, however, the Commenters would like to point out some of the reasons that adoption of ATSC 3.0 will be especially important for public media.

ATSC 3.0 will dramatically enhance the ability of public television stations to serve their communities. High Efficiency Video Coding will enable public stations to increase the amount of programming they offer to the diverse audiences that they serve. The ability to broadcast ultra-high definition and high dynamic range signals will bring a new standard of quality to viewers, free, commercial free, and whether or not they enjoy access to fast broadband or multi-channel cable technology. The ability of public television to provide rich media content to first responders and the viewing public in an addressable format will dramatically increase the usefulness, effectiveness, and impact of the emergency alert services that many public television stations provide in cooperation with local emergency response agencies.

The commenters support the urgent need to approve ATSC 3.0 as an enabling technology for distance learning while maintaining ATSC 1.0 service during an extended transitional period.

### **EDUCATION**

Public television has long been recognized for its commitment to education. Hundreds of public television stations around the country, many licensed to educational institutions and government entities, provide a broad range of educational services to schools, teachers, students, and more broadly to their communities.

Michigan State University has long been committed to the development of innovative technology to serve the citizens of Michigan. MSU was an early experimenter and developer of television technology. It built WKAR-TV in 1954 as a cutting-edge experiment in applications of new technology to serve the state's population. The development and adaption of technology to serve the public good is central to MSU's mission as a Land Grant University, which continues to this day.

Detroit Public Television's WTVS began operations not long after MSU's WKAR, in 1956. Since its inception, DPTV has been committed to education. It is a pioneer in the Corporation for Public Broadcasting's American Graduate initiative, designed to help educators dramatically reduce the nation's high school dropout rate, and in the Ready To Learn program, a joint initiative of the Corporation for Public Broadcasting, the Public Broadcasting Service, and the U.S. Department of Education.

True to their leadership roles, MSU and DPTV, a few months ago, announced a joint plan to bring a twenty-four hour over-the-air children's service to Michigan. Shortly after that announcement, PBS announced that it was making its children's content available to stations on a twenty-four hour basis.

Kentucky Authority for Educational Television is Kentucky's largest classroom. KET offers three program streams over a network of sixteen full-power stations, the largest educational television network in the U.S. KET also offers an extensive distance learning service for high school students and home-schooled children, including content that ranges from introductory courses to advanced placement and dual credit courses. KET also provides broadcast services to help adult learners who did not complete high school obtain a General Equivalency Diploma. KET has recently launched *Fast Forward*, a service that leverages digital media to increase the accessibility and effectiveness of its high school equivalency course materials. KET makes *Fast Forward* available to public television stations around the country. Like DPTV, KET is a leading station in the American Graduate and Ready To Learn initiatives.

PMC, MSU, DPTV and KET are all eager to implement ATSC 3.0 broadcast technology and use its new capabilities to increase the impact of their efforts in education.

For educational services more generally, the compatibility of ATSC 3.0 with IP data distribution is a game changer. With ATSC 3.0 technology, public television stations and academic institutions can easily partner to deliver addressable, IP compatible data files with educational content to ATSC 3.0 gateways in specific homes. Using this technology, primary and secondary schools, universities, community colleges, and other educational institutions will be able to deliver rich media content to the individual residences of students who have enrolled in specific courses.

An academic institution such as MSU can provide students with a pre-configured ATSC and Wi-Fi gateway as part of the course registration process. Since the course content produced by MSU can be delivered over-the-air, students would be able to receive the coursework

virtually anywhere without needing access to a wired broadband connection and without having to pay for 3G or 4G data charges.

The widespread delivery of ATSC 3.0 IP data files to rural areas will be especially beneficial to residents of communities where fast broadband connections are not available, as well as to low income environments where students and adults eager to learn cannot afford the dedicated broadband connections common in affluent households. If a back channel to the academic institution is needed, relatively inexpensive low bandwidth channels such as, worst case, a telephone modem, will suffice.

As a Ready To Learn and American Graduate pioneer, DPTV knows that a critical difference between young lower income students and their more affluent peers is the level of readiness to learn in a classroom environment. Lower income students have consistently been shown to be less ready for school. As a result, they easily fall behind in the first few grades and may never catch up. Many of these lower income students enter school after being raised in less formal day care environments, often provided by family members such as grandparents.

DPTV is interested in using ATSC 3.0 technology to deliver educational materials in an addressable manner to these informal teachers of our youngest learners. With ATSC 3.0, stations can deliver educational content as IP compatible files to the day care provider at any time, without the expense of broadband connection. For example, DPTV can use ATSC 3.0 technology to deliver teacher training and learning support materials cheaply and efficiently. Because DPTV has an extensive working arrangement with the Detroit Public Schools system, DPTV can provide support materials to teachers at home, in school, or when they are out-and-about. The ability to deliver these files for free, over-the-air, to all kinds of devices, not just those found in school buildings, will be a game changer for teachers.

KET is also interested in using ATSC 3.0 to enrich its distance learning offerings and *Fast Forward* service. The ability to integrate ATSC 3.0-delivered files with local broadband networks will enable students and adult learners to access educational materials on-demand, with the device that works best for them. Access by a rural population is especially important to KET. Kentucky is a rural state and, despite Kentucky's substantial investment in broadband networks, many Kentuckians still do not have broadband service. Many lack the service because their community is not wired or others because they can't afford it. An underserved rural population would benefit enormously from having access to broadband-delivered services through ATSC 3.0. KET can provide these underserved citizens an ATSC 3.0 gateway when they register for one of KET's distance learning programs.

ATSC 3.0 will enable MSU, DPTV and KET to reach learners wherever they are. The IP compatibility of files delivered by ATSC 3.0, and the ability to mix and mingle these files with files that can be received anywhere, presents new opportunities for creating and delivering educational materials.

PMC has worked with public television and radio stations for more than twenty years to help stations deliver innovative, effective public service to their communities. It believes that ATSC 3.0 has the potential to drastically change the nature of the service that public television stations deliver. As a public media organization recognized for fostering innovation, PMC has already begun to bring public television stations together to identify creative and innovative new services that the stations may offer. Over the coming months, PMC and a group of leading public stations plan to create an agenda of immediately viable public service that public stations can offer with ATSC 3.0.

Education is one of those services. The capability of ATSC 3.0 to deliver coursework to students will have immediate impact. Broad consumer adoption of the technology is not required for stations to deliver significant societal value. Organizations like MSU and KET have existing processes for registering students in distance learning programs, and they know who and where their students are. This registration process includes providing course materials and other academic resources to each student. Whether MSU does this directly or through a local community college partner, whether KET registers students itself or through locally-based school boards, 3.0 will enable direct contact between the provider of educational materials and students. Thus, regardless of the rate of adoption of ATSC 3.0 receivers by the general public, ATSC 3.0 can immediately provide opportunities for distance learning and other educational services.

Although these comments have focused on the benefits of ATSC 3.0 for delivering educational content to those who desperately need it -- young students from disadvantaged environments, older students who want to obtain a high school diploma or work-related certification -- ATSC 3.0 can deliver educational services to professional users as well. With 3.0, stations can provide continuing legal education, information that helps physicians stay current with medical advances, and course materials that confer professional or semi-professional certifications.

Given the potential power of ATSC 3.0 technology, MSU, DPTV, KET and PMC urge the FCC to move quickly to approve the ATSC 3.0 standard so that the innovative new services can become available to communities sooner rather than later.

### **COLLABORATION**

For all the reasons discussed above, the Commenters believe that the noncommercial stations will be early adopters of the ATSC 3.0 standard. However, the Commenters also

recognize that there are obstacles to the adoption of ATSC 3.0, such as the lack of backwards compatibility of ATSC 3.0 receivers. Certain noncommercial educational stations may be able to play an important role by serving as the provider of legacy ATSC 1.0 services as the markets transition to ATSC 3.0. Particularly in markets where multiple noncommercial television stations serve their communities, some of these noncommercial stations may want to serve as the “host” station for ATSC 1.0 so that other broadcasters in that market can move to ATSC 3.0.

The Joint Petition calls for a mix of ATSC 1.0 and ATSC 3.0 stations in a single market. A “host” ATSC 1.0 station would carry the primary content stream of other stations so that those stations can transition to ATSC 3.0. This would ensure that over-the-air viewers who have not yet obtained an ATSC 3.0 gateway or receiving device would have access to the primary programming of a station that has switched to ATSC 3.0. As the transition progresses, the ATSC 1.0 station (or stations) would provide spectrum for other stations that wish to switch to ATSC 3.0. Eventually, the “host” station would move to ATSC 3.0.

The Commenters believe that public television stations are uniquely able to provide the legacy ATSC 1.0 services:

- Because of their noncommercial, nonprofit status, public television stations are generally not seen as direct competitors by many commercial stations. Their unique status allows many public stations to be perceived as desirable partners that commercial stations can trust to carry their content without violating antitrust or other anti-competitive guidelines.
- Many areas of the country will continue to receive service from more than one public television station after the auction. Spectrum efficiency would be greatly improved if one of the public stations could be used to carry its own ATSC 1.0

signal as well as the signals of other stations in the area. The remaining public television station(s) would be free to adopt ATSC 3.0 service and deliver the benefits of the new technology to its community.

Some regulatory flexibility would be required in order for public television stations to provide ATSC 1.0 services to stations converting to ATSC 3.0. Noncommercial licensees would need to be able to segregate some spectrum for the transmission of commercial programs during a transition period. The authorization needed for such usage could be narrowly limited to the broadcast of commercial programs provided by stations that convert to ATSC 3.0, and only for the time required for viewers in a region to adopt ATSC 3.0 receivers. Any authorization would, of course, be conditioned on the continuation of the station's own noncommercial service. The Commenters therefore recommend that in the rulemaking proceeding which they urge the Commission to initiate, the Commission invite comment on how noncommercial television stations could serve as host stations.

### **CONCLUSION**

Much of the potential of ATSC 3.0 has been framed in the enhanced revenue potential for station licensees from services such as geo-targeted advertising and commercial data delivery services. We think there is also substantial benefit to the public for the FCC to approve the use of ATSC 3.0 by willing public television stations. While some public television stations may be uniquely situated to be "host" stations in markets served by multiple public stations, many other noncommercial stations will eagerly step up to be early adopters of ATSC 3.0.

The undersigned are particularly excited about the potential of ATSC 3.0 for education, and we urge the FCC to approve the use of ATSC 3.0 on that basis. Others will comment on the potential for ATSC 3.0 in a public service context around public safety, better audio for the

hearing-impaired, ability to caption content in multiple languages, and similar important benefits. We also believe those benefits will be substantial. But we believe the educational benefits of adoption of ATSC 3.0 almost literally cannot be overstated. We urge the FCC to allow stations to adopt the ATSC 3.0 standard.

Respectfully submitted

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