

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

NOTICE OF PROPOSED RULEMAKING*

Adopted: [] Released: []

Comment Date: [60 days after date of publication in the Federal Register]
Reply Comment Date: [90 days after date of publication in the Federal Register]

By the Commission:

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*This document has been circulated for tentative consideration by the Commission at its February open meeting. The issues referenced in this document and the Commission's ultimate resolution of those issues remain under consideration and subject to change. This document does not constitute any official action by the Commission. However, the Chairman has determined that, in the interest of promoting the public's ability to understand the nature and scope of issues under consideration by the Commission, the public interest would be served by making this document publicly available.

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I. INTRODUCTION AND SUMMARY

1. In this *Notice of Proposed Rulemaking (NPRM)*, we propose to authorize television broadcasters to use the “Next Generation” broadcast television (Next Gen TV) transmission standard associated with recent work of the Advanced Television Systems Committee (“ATSC 3.0”) on a voluntary, market-driven basis, while they continue to deliver current-generation digital television (DTV) broadcast service, using the “ATSC 1.0 standard,” to their viewers.¹ ATSC 3.0 is being developed by broadcasters with the intent of merging the capabilities of over-the-air (OTA) broadcasting with the broadband viewing and information delivery methods of the Internet, using the same 6 MHz channels presently allocated for DTV. According to a coalition of broadcast and consumer electronics industry representatives that has petitioned the Commission to authorize the use of ATSC 3.0,² this new standard has the potential to greatly improve broadcast signal reception, particularly on mobile devices and television receivers without outdoor antennas, and it will enable broadcasters to offer enhanced and innovative new features to consumers, including Ultra High Definition (UHD) picture and immersive audio, more localized programming content, an advanced emergency alert system (EAS) capable of waking up sleeping devices to warn consumers of imminent emergencies, better accessibility options, and interactive services. With today’s action, we aim to facilitate private sector innovation and promote American leadership in the global broadcast industry.

2. In this proceeding, we seek to adopt rules that will afford broadcasters flexibility to deploy ATSC 3.0-based transmissions, while minimizing the impact on, and costs to, consumers and other industry stakeholders. Among other matters, we seek public input on the following issues and proposals:

- *Voluntary Use.* We propose to authorize voluntary use of ATSC 3.0 transmissions and to incorporate by reference the relevant portions of the ATSC 3.0 standard into our rules. We seek comment on which components of the standard should be incorporated into our rules.
- *Local Simulcasting.* We propose to require “local simulcasting” for stations that choose to deploy Next Gen TV transmissions so that broadcasters will continue to provide their existing ATSC 1.0-based services to their viewers.³ We seek comment on a number of issues relating to the implementation of local simulcasting.

¹ For purposes of this *NPRM*, a “Next Gen TV” station means a station that is broadcasting its signal in both the ATSC 1.0 and the ATSC 3.0 standard in its local broadcast market.

² Joint Petition for Rulemaking of America’s Public Television Stations, the AWARN Alliance, the Consumer Technology Association, and the National Association of Broadcasters, GN Docket No. 16-142 (filed Apr. 13, 2016), <https://www.fcc.gov/ecfs/filing/60001667342/document/60001701021> (Petition).

³ Under this proposal, each television station choosing to broadcast its signal in both ATSC 1.0 and ATSC 3.0 would arrange for another station in its local market to act as a “host” station and “simulcast” one of the two signals. Thus, for example, if only one station in a local market elects to broadcast its signal in both ATSC 1.0 and ATSC 3.0, it would arrange for a “host” station in the market to simulcast its ATSC 1.0 signal. If both stations elect to broadcast their signals in both ATSC 1.0 and ATSC 3.0, one station would broadcast its own ATSC 3.0 signal and act as the “host” station for the other’s ATSC 3.0 signal, and one station would broadcast its own ATSC 1.0 signal and act as

- *MVPD Carriage.* We propose that MVPDs be required to continue carrying broadcasters' ATSC 1.0 signals, but not be required to carry ATSC 3.0 signals, during the Next Gen TV transition. We also seek comment on issues related to the voluntary carriage of ATSC 3.0 signals through the retransmission consent process.
- *Service and Interference Protection.* We seek comment on whether Next Gen TV transmissions will raise any interference concerns for existing DTV operations or for any other services or devices that operate in the TV bands or in adjacent bands. We propose to calculate Next Gen TV interference to DTV signals using the methodology and planning factors specified in OET Bulletin 69 (OET-69). We also propose to define a "DTV-equivalent" service area for the Next Gen TV signal using the methodology and planning factors defined for DTV in OET-69 and to define a protection threshold for Next Gen TV signals that would be as robust as an equivalent DTV signal. Moreover, we seek comment on what, if any, additional interference protections are necessary with respect to other services and devices that operate in the TV bands or adjacent bands.
- *Public Interest Obligations and Consumer Protection.* We propose that television stations transmitting signals in ATSC 3.0 be subject to the public interest obligations currently applicable to television broadcasters. In addition, we seek comment on our tentative conclusion that it is unnecessary at this time to adopt an ATSC 3.0 tuner mandate for new television receivers. We seek comment on whether broadcasters should be required to provide on-air notifications to educate consumers about their transition to Next Gen TV service and on how to ensure that deployment of Next Gen TV-based transmissions will not negatively impact the post-incentive auction transition process.

II. BACKGROUND

3. On April 13, 2016, America's Public Television Stations, the Advanced Warning and Response Network (AWARN) Alliance, the Consumer Technology Association, and the National Association of Broadcasters (NAB) filed a joint petition for rulemaking asking the Commission to allow local television stations to adopt the Next Gen TV broadcast transmission standard, ATSC 3.0, on a voluntary, market-driven basis, while continuing to deliver current-generation DTV broadcast service using the ATSC 1.0 transmission standard to their communities of license.⁴ Petitioners state that allowing broadcasters to use this additional broadcast transmission standard, the "physical layer" of ATSC 3.0, will make more efficient use of spectrum, allow consumers to enjoy new features and higher quality picture and sound, and enable broadcasters to bring innovative new services and data delivery to homes and communities.⁵ They state that on top of this new physical layer, IP transport will allow new services and capabilities to be provided to consumers much more rapidly, and will permit seamless integration with other IP-based services and platforms.⁶ On April 26, 2016, the Media Bureau issued a Public Notice seeking comment on the Petition.⁷ The Commission received 35 comments and 14 replies to the Petition.

the "host" station for the other's ATSC 1.0 signal. Because ATSC 3.0 is not backward compatible with the existing DTV standard and the equipment that over-the-air viewers rely on today cannot access ATSC 3.0, local simulcasting will be a critical means to mitigate disruption to over-the-air viewers that otherwise could result from the use of ATSC 3.0.

⁴ See Petition at 2-3.

⁵ *Id.*

⁶ *Id.*

⁷ *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*

4. Commenters supporting the Petition include broadcasters, equipment manufacturers, and tower companies.⁸ These commenters agree that authorizing use of the Next Gen TV transmission standard associated with ATSC 3.0 will allow broadcasters to offer innovative technologies and services to consumers, such as UHD picture and immersive audio,⁹ improved over-the-air reception, IP-based transport streams, enhanced mobile capability, more localized content, better accessibility options, and advanced emergency alerting.¹⁰ The potentially life-saving advancements in emergency alerting will include geo-targeting of emergency alerts to tailor information for particular communities and enhanced datacasting to provide videos, photos, maps, floorplans, and other critical data to law enforcement, first responder, and emergency management organizations.¹¹ Advanced emergency alerting will also include the capability to “wake up” receivers to alert consumers to sudden emergencies and disasters, such as tornadoes and earthquakes.¹² Other industry stakeholders, including AT&T, CTIA, DISH, the National Cable & Telecommunications Association (NCTA), and public interest groups, offer support for

Authorize Permissive Use of the “Next Generation TV” Broadcast Television Standard, Public Notice, 31 FCC Rcd 3858 (MB 2016).

⁸ Advanced Television Broadcasting Alliance (ATBA) Comments at 7; AGC Systems LLC (AGC) Comments at 2; American Tower Corporation (American Tower) Comments at 1; Cox Media Group (CMG) Comments at 1; Dolby Laboratories, Inc. (Dolby) Comments at 1; Entravision Communications Corporation (Entravision) Comments at 1; GatesAir Inc. (GatesAir) Comments at 2; Graham Media Group (Graham Media) Comments at 2; Gray Television Inc. (Gray) Comments at 1; LPTV Spectrum Rights Coalition (LPTV Coalition) Comments at 1; Meredith Corporation (Meredith) Comments at 1; Morgan Murphy Media and Bonten Media Group, Inc. (Morgan) Comments at 1; Pearl Mobile DTV Company LLC (Pearl) Comments at 1; Public Broadcasting Service and Corporation for Public Broadcasting (PTV) Comments at 1-2; Public Media Company, Michigan State University, Detroit Public Television, and Kentucky Authority for Education Television (Public Media) Comments at 2; Raycom Media, Inc. (Raycom) Comments at 1; Sinclair Broadcast Group (Sinclair) Comments at 1; Advanced Television Systems Committee, Inc. (ATSC) Comments at 4-5; Watch TV Comments at 1; ABC Television Affiliates Association, CBS Television Network Affiliates Association, FBC Television Affiliates Association, and NBC Television Affiliates (Network Affiliates) Reply at 1; E.W. Scripps Company (Scripps) Reply at 2; Hearst Television (Hearst) Reply at 1; LG Electronics, Inc. (LG) Reply at 1; Meredith Corporation, Hubbard Television, and Gray Television Group, Inc. (Meredith et al.) Reply at 1; NAB Reply at 1-2; Nexstar Broadcasting, Inc. (Nexstar) Reply at 1; One Media LLC (One Media) Reply at 1; Pearl Reply at 1-2; Raycom Reply at 1; Sinclair Reply at 1.

⁹ “Ultra HD” or “UHD” has higher resolutions (more pixels) for a more realistic picture and color quality than HDTV. *Annual Assessment of the Status of Competition in the Marketplace for the Delivery of Video Programming*, Seventeenth Report, 31 FCC Rcd 4472, 4563, para. 213 (2016). Currently, UHD comes in resolutions of 4K (2160p) with 8.3 megapixels or four times as many as full HD (1080p) and now 8K (4320p) with 33.2 megapixels or 16 times as many as full HD. *Id.* “Immersive audio” goes beyond “surround sound” and uses more channels to create the sensation of height (sound above). Jim DeFilippis, *Do We Need More Audio? A Primer on Immersive (3D) Sound*, TVTechnology Aug. 12, 2015, <http://www.tvtechnology.com/audio/0014/do-we-need-more-audio-a-primer-on-immersive-3d-audio/276763>. See also Petition at 4-5 (Next Gen TV’s immersive audio experience will provide “accurate sound localization, customizable sound mixes, and a greater sense of spatial sound envelopment”); Dolby Comments at 3 (stating that the “immersive” audio feature will allow sound to surround the listener not only in the horizontal plane, but also overhead).

¹⁰ CMG Comments at 2; Dolby Comments at 1-5; Entravision Comments at 3-5; GatesAir Comments at 2; Graham Media Comments at 1-3; Meredith Comments at 1; Morgan Comments at 2; Pearl Comments at 1-2; PTV Comments at 3; Public Media Comments at 2, 5; Raycom Comments at 2-4; Sinclair Comments at 2; ATSC Comments at 3; Watch TV Comments at 3; Network Affiliates Reply at 3; Scripps Reply at 3-4; Hearst Reply at 3; LG Reply at 1-2; NAB Reply at 2-3; One Media Reply at 2-3; Raycom Reply at 1.

¹¹ Petition at 5; Entravision Comments at 4-5; GatesAir Comments at 3; RTP Holdings Comments at 7; Sinclair Comments at 2.

¹² Petition at 5; AGC Comments at 11; ATSC Comments at 3; Entravision Comments at 4-5.

broadcaster innovation,¹³ but ask the Commission to ensure that multichannel video programming distributors (MVPDs) and their customers are not burdened with new carriage obligations or costs on account of the transition to use of ATSC 3.0 transmissions;¹⁴ that the deployment of ATSC 3.0-based stations does not have any impact on the broadcast television incentive auction, the post-auction repacking process, or the post-repacking 600 MHz frequency environment;¹⁵ and that broadcasters continue to meet their public interest obligations regardless of the technology used to deliver broadcast signals.¹⁶

III. NOTICE OF PROPOSED RULEMAKING

A. Authorization of Voluntary Use of ATSC 3.0 Transmissions

5. As requested by the Petitioners, we propose to authorize the ATSC 3.0 transmission standard as an optional standard that can be used by television licensees on a voluntary basis while they continue to deliver current generation ATSC 1.0 service to their communities.¹⁷ We also propose to incorporate by reference into our rules ATSC A/321:2016 “System Discovery and Signaling” (A/321), which is one of the two components of the “physical layer” of the ATSC 3.0 standard. According to the Petitioners, this layer of the standard points to the RF characteristics of an ATSC 3.0 transmission, which “determines interference and coverage.”¹⁸ We seek comment on these proposals and on whether it is necessary to incorporate any other parts of the ATSC 3.0 standard aside from A/321 into our rules at this time.

6. According to the Petitioners, the ATSC 3.0 standard is split into multiple individual parts under a unifying parent standard. It is structured as three layers that roughly correspond to a subset of the layers found in the Open Systems Interconnection seven-layer model (OSI) commonly used to characterize and standardize telecommunications systems.¹⁹ The three layers of the ATSC 3.0 standard are (1) the physical layer, (2) the management and protocols layer, and (3) the applications and presentation layer.²⁰ Each component of the standard fits into only one layer of the system, making it

¹³ AT&T Services, Inc. (AT&T) Comments at 3; DISH Network L.L.C. (DISH) Comments at 2; NCTA Comments at 2; Public Knowledge, Common Cause, and Open Technology Institute at New America (Public Knowledge) Comments at 1; CTIA Reply at 1. We note that following the submission of its comments in this proceeding, the National Cable & Telecommunications Association changed its name to NCTA – The Internet and Television Association. We will refer to this organization herein as NCTA. Several commenters, including the American Cable Association (ACA) and the American Television Alliance (ATVA), urge the Commission to proceed by issuing a Notice of Inquiry, rather than an NPRM, in order to fully examine the range of issues arising from the proposed use of Next Gen TV transmission, including MVPD carriage issues and the costs that the proposed transition would impose on MVPDs. ACA Comments at 6, 9-11; *see also* Letter from Mike Chappell, Executive Director, American Television Alliance, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 16-142, at 3 (filed Dec. 2, 2016) (ATVA Dec. 2, 2016 *Ex Parte* Letter) (agreeing with ACA that the Commission should proceed by issuing an NOI); Letter from Brendan F. Haggerty, Area Manager, Federal Regulatory AT&T Services, Inc., to Marlene H. Dortch, Secretary, FCC, GN Docket No. 16-142, at 2 (filed Dec. 5, 2016) (AT&T and DISH Dec. 5, 2016 *Ex Parte* Letter) (stating that AT&T and DISH believe that an NOI is the more appropriate vehicle at this time for the FCC to fully address the implications of the proposed transition to ATSC 3.0).

¹⁴ AT&T Comments at 3-5; DISH Comments at 6-8; NCTA Comments at 2-3.

¹⁵ CTIA Reply at 1-2.

¹⁶ Public Knowledge Comments at 7-15.

¹⁷ 47 CFR § 73.682(d).

¹⁸ Petition at 15.

¹⁹ *See* Rich Chernock, ATSC, *ATSC 3.0: What Will the “Standard” Look Like? Documentation Architecture for Next-Gen TV’s Suite of Standards*, <http://atsc.org/newsletter/atsc-3-0-what-will-the-standard-look-like/> (last visited Jan. 13, 2017).

²⁰ Petition at 10-12.

possible to develop and update each part independently. The physical layer is the portion of the system that includes the definition of the RF waveform used in ATSC 3.0, as well as the coding and error correction that determine the robustness of the signal to noise and interference. The management and protocols layer organizes data bits into streams and files and establishes the protocol for the receiver to direct those streams to the proper destinations. The applications and presentation layer includes audio and video compression technologies, captions and descriptive audio, emergency alerts, parental controls, interactive applications, and how the station is displayed to the viewers.

7. The Petitioners seek the approval only of the ATSC A/321 standard into our rules. They argue that A/321 is the only part of the ATSC 3.0 standard that needs to be approved by the Commission in order to assure a stable and predictable RF operating environment.²¹ If we decide to authorize television broadcasters to use ATSC 3.0, we propose that it is necessary to approve A/321 at a minimum and to incorporate it by reference into our rules.

8. LG and others suggest that we also may need to incorporate A/322:2016 “Physical Layer Protocol” (A/322), the other component of the ATSC 3.0 physical layer, into our rules because it completes the description of the core RF waveform used by the standard.²² At the time that the Petition was filed, A/321 was the only part of the ATSC 3.0 physical layer that had been ratified by the ATSC. Subsequent to the Petition, the ATSC has also ratified the A/322 part of the ATSC 3.0 physical layer.²³ As discussed in Section III(E) below, LG requests the incorporation of A/322 into our rules in order to ensure that broadcasters will have the flexibility to operate certain types of single frequency networks.²⁴ LG further notes that by addressing the entire physical layer (both ATSC A/321 and A/322) in one rulemaking, the Commission can avoid the need for a future, separate rulemaking to authorize use of A/322.²⁵ We seek comment on whether we should incorporate A/322 into our rules. We also seek input on what the benefits or drawbacks would be to incorporating it into our rules.²⁶ We also seek comment on whether the Commission should incorporate any additional details of the ATSC 3.0 technology into FCC regulations.²⁷ If so, what specific components of the standard should we incorporate and why?²⁸

B. Local Simulcasting

9. Local simulcasting is a key component of the Petition’s proposal for the voluntary use of the ATSC 3.0 transmission standard. ATSC 3.0 service is not backward-compatible with existing TV sets/receivers (which have only ATSC 1.0 and analog tuners). This means that consumers will need to

²¹ *Id.* at 15.

²² LG Reply at 3; LS Telcom, Inc. and RadioSoft, Inc. Comments at 2.

²³ See ATSC News Release, *ATSC Physical Layer Standard Approved*, Sept. 8, 2016, <http://atsc.org/news-release/atsc-3-0-physical-layer-standard-approved>.

²⁴ LG Reply at 3; See *infra* Section III(E), Single Frequency Networks (SFN) and Distributed Transmission Systems (DTS).

²⁵ LG Reply at 3-4.

²⁶ The A/322 standard describes the RF/transmission system of the physical layer waveform and is composed of numerous features that make simultaneous ATSC 3.0 mobile, handheld, and indoor reception possible in a single RF channel. A/322 is also the ATSC standard that enables single frequency networks (SFNs).

²⁷ See DISH Comments at 8.

²⁸ We note that the technical means by which broadcasters would be able to satisfy various preexisting regulatory obligations, such as closed captioning rules, CALM Act requirements, and emergency alert obligations, will be included in layers of the ATSC 3.0 standard that are outside of A/321. As noted above, the technology that enables these services is generally included in the applications and presentation layer of ATSC 3.0, rather than the physical layer. In Section III(F)(2), Public Interest Obligations, below, we propose to apply all of our existing broadcast rules to Next Gen TV stations.

buy new TV sets or converter equipment to receive ATSC 3.0 service. Local simulcasting would enable broadcasters to provide both ATSC 3.0 and ATSC 1.0 service to viewers (without the need for an additional allocation of spectrum to broadcasters), thereby reducing the disruption to consumers that may result from ATSC 3.0 deployment.²⁹ Specifically, under the Petition’s local simulcasting proposal, each television broadcaster choosing to broadcast its signal in ATSC 3.0 format from its current facility will arrange for another television station (*i.e.*, a “host” station) in its local television market to “simulcast” its video programming in ATSC 1.0 format in order to mitigate disruption to over-the-air viewers.³⁰ As discussed in more detail below, the Petition also seeks, for purposes of broadcast carriage rights, to use local simulcasting as an alternate means for Next Gen TV broadcasters to deliver a good quality ATSC 1.0 signal to MVPDs that cannot receive and process the broadcaster’s ATSC 3.0 signal.³¹

10. The Petition seeks one rule change to authorize its local simulcasting proposal. Under Section 73.624(b) of the Commission’s Rules,³² each television licensee must broadcast one free-to-air DTV signal in at least standard-definition (SD) quality. The Petition asks us “to specify that this requirement may be accomplished by stations deploying Next Generation TV by (1) broadcasting at least one free-to-air Next Gen TV signal and (2) arranging for the simulcast of that signal in the current DTV standard on another broadcast facility....”³³ The Petition also states that local simulcasting “agreements would be subject to the Commission’s existing rules and policies as to licensee responsibility and control.”³⁴ We address below a number of issues related to the Petitioner’s proposal regarding local simulcasting. Among other things, we propose to require local simulcasting as a condition to offering ATSC 3.0, seek comment on whether simulcast channels should be separately licensed as second channels of the originating stations or treated as multicast streams of the host stations, and seek comment on whether we should adopt signal coverage or quality requirements for local simulcasts.

1. Requiring Next Gen TV Stations to Simulcast

11. We propose to require Next Gen TV broadcasters to simulcast their ATSC 3.0 stream in ATSC 1.0 format, as proposed in the Petition, to ensure that viewers maintain access to the station during the transition to ATSC 3.0. We seek comment on this proposal. We assume that, for purposes of the Petitioners’ local simulcasting proposal, a “simulcast” means a stream with identical content to the video programming aired on the originating station’s primary ATSC 3.0 stream, but we seek comment on this assumption and whether it is an appropriate definition for “simulcast” for purposes of our rules. If the simulcast content will not be identical to the originating station’s primary video programming stream, we ask commenters to explain the reasons for any deviations in content and/or format (*i.e.*, high definition

²⁹ Petition at 17-18 (“Local simulcasting will permit uninterrupted service to continue as the American public embraces Next Generation TV reception equipment, and will permit this innovative new standard to be implemented without necessitating new simulcast channels from the Commission.”).

³⁰ *Id.* DTV stations cannot broadcast in both ATSC 3.0 and ATSC 1.0 from the same facility, which is why broadcasters need to partner with other stations in the market in order to simulcast in both transmission standards.

³¹ See *infra* Section III(C), MVPD Carriage.

³² 47 CFR § 73.624(b)

³³ Petition at 17. The Petition asks that the rule require only that the ATSC 1.0 simulcast signal “serv[e] a substantially similar community of license.” *Id.* We consider this issue about the required service coverage of the ATSC 1.0 simulcast signal separately in this section, below. See *infra* paras. 23-24.

³⁴ Petition at 18.

(HD) versus SD) and the impact of such deviations on television viewers and the regulatory implications.³⁵

12. We also propose to require that Next Gen TV broadcasters ensure that at least one free ATSC 3.0 video stream is available at all times throughout the ATSC 3.0 coverage area and, as discussed below,³⁶ that such ATSC 3.0 signal be at least as robust as a comparable DTV signal to ensure that viewers within the protected coverage area continue to receive service at the current DTV protection levels. We seek comment on these proposals and whether any other requirements should be imposed on the ATSC 3.0 transmission stream as part of local simulcasting. Because ATSC 3.0 broadcasters will have the ability to broadcast more robust signals, which could effectively expand their consumer base beyond the current comparable DTV coverage area or provide coverage to areas that were previously unserved due to terrain-limited propagation conditions within the contour, we seek comment on how we should treat these expanded areas.

13. We seek comment on whether to require simulcasting agreements to be filed with the Commission. Should the Commission review and approve local simulcasting arrangements? If so, should we establish bright-line rules or should we evaluate local simulcasting proposals on a case-by-case basis? Should there be any restrictions or limitations on local simulcasting proposals? We also seek comment on whether we should require certain provisions to be included in local simulcasting agreements and, if so, what requirements we should adopt.

14. Apart from the host station model set forth in the Petition, we ask commenters to address other potential deployment alternatives that might accelerate adoption of the ATSC 3.0 standard. For example, during the marketplace conversion to the new standard, should we consider 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?

2. Methods for Licensing or Authorizing Simulcast Stations

15. We seek comment on what license modifications would be needed for a television broadcaster to convert its current ATSC 1.0 facility to a facility transmitting ATSC 3.0 signals. At a minimum, we believe that the broadcaster would need to modify its TV station service class for its broadcast facility so that we can track and make publicly available information about the type of broadcast service provided by stations during the Next Gen TV transition.³⁷ We propose that these modifications be treated as minor modifications to the license.³⁸ We seek comment on these issues. Are other facility changes required to convert a station from ATSC 1.0 to ATSC 3.0 transmissions?

16. Further, we seek comment on whether, as a regulatory matter, simulcasts should be separately licensed as second channels of the originating stations or treated as multicast streams of the host stations. Or should broadcasters be able to choose between the two approaches? Under a licensed simulcast approach, simulcast arrangements could be implemented via temporary channel sharing agreements (following the existing “channel sharing” model)³⁹ between the licensee of the originating station and that of the host station. For example, a Next Gen TV broadcaster might choose to deploy ATSC 3.0 service

³⁵ See also *infra* para. 35 (seeking comment on whether we should require the ATSC 1.0 simulcast and the ATSC 3.0 signal to have identical content if the ATSC 1.0 simulcast will be used to effectuate the carriage rights of the 3.0 signal).

³⁶ See *infra* para. 47.

³⁷ For example, in LMS, a new service group code of NGDTV could signify the various classes of ATSC 3.0 stations, including NGDTV for full-service 3.0, NGDTS for DTS/SFN 3.0, NGLPT for low-power translator 3.0 stations, NGDCA for Class A, and NGLPD for low-power 3.0 stations.

³⁸ See 47 CFR §§ 73.3572, 74.787.

³⁹ See *infra* note 40 (describing “channel sharing”).

by converting its current facility to broadcast in ATSC 3.0 and obtaining a temporary channel sharing license to share a host station's channel during the Next Gen TV transition period in order to broadcast its simulcast in ATSC 1.0 (from the host's facility). Similarly, a Next Gen TV broadcaster might choose to deploy ATSC 3.0 service by continuing to broadcast in ATSC 1.0 from its existing facility and obtaining a temporary channel sharing license to share a host station's channel during the Next Gen TV transition period in order to broadcast its simulcast in ATSC 3.0 (from the host's facility). Under this approach, the ATSC 1.0 and ATSC 3.0 signals would be two separately licensed channels of the originating station. This would be similar to the DTV transition, when both analog and digital signals were licensed by the Commission.⁴⁰

17. If we adopt a licensed simulcasting approach, we propose to adopt licensing procedures similar to those we adopted for channel sharing.⁴¹ Specifically, we propose to require a station whose program stream will be changing channels to file an application for a construction permit specifying the technical facilities of the host station. We also propose to treat such applications as minor modification applications. Although one of the originating station's program streams will be changing channels, which is a normally a major change under our rules,⁴² we believe that treating this change as minor is appropriate because the originating station will be assuming the authorized technical facilities of the host station, meaning that compliance with our interference and other technical rules would have been addressed in licensing the host station. Should we instead issue a separate license for the simulcast stream? If so, should that license application be subject to competing applications? In addition, while a full power station seeking to change its channel normally must first submit a petition to amend the DTV Table of Allotments, we propose not to apply this process in the context of licensed simulcasting. Instead, we propose that, after the application for construction permit is approved, the Media Bureau will amend the Table on its own motion to reflect that shared channels (both ATSC 1.0 and ATSC 3.0) will be allotted to one or more communities. We invite comment generally on this approach and any alternatives we should consider.

⁴⁰ As noted, this approach follows the model of channel sharing as introduced in the context of the broadcast incentive auction, whereby two or more stations are separately licensed to share a single 6 MHz channel. Congress authorized channel sharing as a bid option in the broadcast incentive auction. The Commission has also authorized channel sharing between low power television (LPTV) and television translator stations, which did not participate in the auction, and has proposed to authorize channel sharing by full power and Class A stations outside the incentive auction context. The Commission's channel sharing rules apply to situations in which a station relinquishes spectrum usage rights in order to share a channel with another station. Channel sharing stations are separately licensed to operate on the shared channel, are separately subject to all applicable Commission obligations, rules, and policies, and must retain spectrum usage rights sufficient to ensure at least enough capacity to operate one standard definition (SD) programming stream at all times. See Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112-96, § 6403(a)(2) (codified at 47 U.S.C. § 1452), 126 Stat. 156 (2012) (Spectrum Act). See also *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Report and Order, 29 FCC Rcd 6567, 6726-28, paras. 372-77 (2014) (*Incentive Auction Report and Order*), *aff'd*, *Nat'l Assoc. of Broadcasters, et al. v. FCC*, 789 F.3d 165 (D.C. Cir. 2015) (*NAB v. FCC*) (subsequent citation omitted); *Innovation in the Broadcast Television Bands: Allocations, Channel Sharing and Improvements to VHF*, Report and Order, 27 FCC Rcd 4616, 4621-22, para. 11 (2012) (*Channel Sharing Report and Order*). See *Amendment of Parts 73 and 74 of the Commission's Rules to Establish Rules for Digital Low Power Television and Television Translator Stations, Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Third Report and Order, 30 FCC Rcd 14927, 14940-2, paras. 25-28, 14937-45, paras. 20-39 (2015) (*Digital Low Power Third Report and Order*); *Channel Sharing by Full Power and Class A Stations Outside the Broadcast Television Spectrum Incentive Auction Context*, Notice of Proposed Rulemaking, 30 FCC Rcd 6668 (2015) (*Channel Sharing NPRM*). See also 47 CFR §§ 73.3700(h)(1), 74.800(a)(2), (d).

⁴¹ See *Incentive Auction First Order on Reconsideration*, 30 FCC Rcd at 6678, paras. 26-28; *Digital Low Power Third Report and Order*, 30 FCC Rcd at 14941, para. 30.

⁴² See 47 CFR § 73.3572(a)(1),(2); 47 CFR § 74.787(b).

18. A licensed simulcast approach appears to have several potential attributes on which we seek comment. First, a licensed approach implemented via temporary channel sharing could allow noncommercial educational television (NCE) stations to serve as hosts to commercial stations' simulcast programming.⁴³ Because NCE licensees are prohibited by Section 399B of the Communications Act from broadcasting advertisements,⁴⁴ an NCE station would be prohibited from hosting the simulcast programming of a commercial station on a multicast stream under its NCE license. By contrast, it appears that an NCE station would be able to serve as a host to a commercial station if that commercial station is separately licensed. In addition, a licensed simulcast approach could provide certainty that the originating station (and not the host) is responsible for regulatory compliance regarding its simulcast signal, and therefore could give the Commission clear enforcement authority over the originating station in the event of a violation of our rules.⁴⁵ A licensed simulcast approach also would allow us to monitor the deployment of ATSC 3.0 service. This information could be important to the Commission in managing the broadcasters' migration to ATSC 3.0 and informing the public about changes in their television broadcast service. If we decide to license simulcast channels as temporary shared channels, how should we implement such an approach? Should we apply existing rules from the channel-sharing context?⁴⁶ How long should the terms be for temporary channel sharing licenses?

19. Alternatively, simulcast arrangements could be implemented without additional licensing (beyond conversion of the broadcaster's current facility to operate in ATSC 3.0). Under this approach, a Next Gen TV broadcaster could choose to deploy ATSC 3.0 service by converting its current facility to broadcast in ATSC 3.0 and entering into an agreement with a host station to simulcast its programming in ATSC 1.0 via one of the host's multicast streams or by continuing to broadcast in ATSC 1.0 and entering into an agreement with a host station to simulcast its programming in ATSC 3.0 via one of the host's multicast streams. Thus, under a multicast approach, some broadcasters would be licensed to operate only an ATSC 3.0 facility and others would be licensed to operate only an ATSC 1.0 facility.

20. This multicast approach to simulcasting may minimize administrative burdens and offer more flexibility to the broadcast industry. On the other hand, a multicast approach would appear to preclude NCE stations from serving as hosts to the simulcast programming of commercial stations due to the restrictions of Section 399B.⁴⁷ Also, as discussed below, because multicast signals are not entitled to carriage rights, treating simulcast signals as multicast channels under a host's license also raises questions about the carriage rights of such signals, whereas separately licensing such simulcast signals to the originating station would clarify the carriage rights of simulcast signals. In addition, under a multicast

⁴³ In the incentive auction context, commercial and noncommercial stations may share a channel. See *Incentive Auction Report and Order*, 29 FCC Rcd at 6854-6855, paras. 703-704; *Channel Sharing Report and Order*, 27 FCC Rcd at 4628-4629, paras. 23-24.

⁴⁴ Section 399B of the Act provides that “[n]o public broadcast station may make its facilities available to any person for the broadcasting of any advertisement,” which it defines as “any message or other programming material which is broadcast or otherwise transmitted in exchange for any remuneration” 47 U.S.C. § 399(a), (b)(2). See *Ancillary or Supplementary Use of Digital Television Capacity by Noncommercial Licensees*, Report and Order, 16 FCC Rcd 19042, 19052, para. 27 (2001) (concluding that “the Section 399B ban on advertising applies to all broadcast programming streams provided by NCE licensees, but does not apply to ancillary or supplementary services on their DTV channels, such as subscription services or data transmission services, to the extent that such services do not constitute ‘broadcasting.’”). See also *Commission Policy Concerning the Noncommercial Nature of Educational Broadcasting Stations*, Public Notice (1986), republished, 7 FCC Rcd 827 (1992).

⁴⁵ See PTV Comments at 6.

⁴⁶ See *Incentive Auction Report and Order*, 29 FCC Rcd at 6851-6860, paras. 697-711; *Incentive Auction First Order on Reconsideration*, 30 FCC Rcd at 6675-6678, paras. 19-25; *Digital Low Power Third Report and Order*, 30 FCC Rcd at 14939-45, paras. 20-39. See also *Channel Sharing NPRM*, 30 FCC Rcd at 6685-6688, paras. 46-57.

⁴⁷ See *supra* para. 18 and note 44.

approach, the host station, not the originating station, would be subject to the Commission's enforcement authority with respect to the multicast stream.

21. Whether a simulcast signal is treated as a temporarily shared channel separately licensed to the originating station or as a multicast stream under the host's license will affect its regulatory treatment. We seek comment on the regulatory implications, as well as the advantages and disadvantages, of each approach and any others we should consider. Should we be concerned about the enforcement problems created by a multicast approach, particularly with respect to program-related requirements such as children's commercial limits and indecency? If we adopt a multicast approach, should we require stations to report to the Commission the status of their transition to ATSC 3.0? Under either the licensed simulcast or multicasting approach, are there circumstances under which the host station would be deemed an Emergency Alert System (EAS) Participant and thus have obligations under the Commission's EAS rules independent of the obligations of the originating station?⁴⁸ Should host stations be permitted to satisfy their EAS requirements through the use of the originating station's EAS equipment?⁴⁹

22. We also seek comment on whether there are other procedures we could adopt to streamline the process of simulcasting. For example, to avoid administrative burdens, particularly during the post-incentive auction transition period,⁵⁰ should we consider authorizing broadcasters to simulcast via a host station through grants of special temporary authority (STA)?⁵¹ If we were to adopt an approach based on STAs, it is not clear that NCE stations would be permitted to host the simulcast streams of commercial broadcasters or that simulcast transmissions authorized via an STA would have carriage rights.⁵² We seek comment on these issues. We observe that STA authorizations and subsequent extensions are limited by statute to 180-day terms.⁵³ In light of this maximum six-month term for STAs, would an STA approach

⁴⁸ See 47 CFR § 11.11 (identifying the entities that are EAS Participants, as well as those not subject to the EAS rules).

⁴⁹ See *id.* § 11.11(b) (stating that analog and digital broadcast stations that operate as satellites or repeaters of a hub station (or common studio or control point if there is no hub station) and rebroadcast 100 percent of the programming of the hub station may satisfy the Commission's EAS rules through the use of a single set of EAS equipment at the hub station which complies with §§ 11.32 and 11.33).

⁵⁰ See *infra* para. 77 (describing the 39-month period following the completion of the incentive auction during which stations being repacked as a result of the auction will move to their newly-assigned frequencies).

⁵¹ See 47 U.S.C. § 309(f); 47 CFR § 73.1635. Stations seeking an STA must satisfy the notice and filing requirements of § 73.1635 of the rules and file an electronic request through CDBS. See 47 CFR § 73.1635.

⁵² As noted above, NCE licensees are prohibited by Section 399B from broadcasting advertisements, and it appears that an NCE station therefore would be prohibited from hosting the simulcast programming of a commercial station under its NCE license. In the context of a simulcast arrangement, it is not clear whether an STA authorization would be considered a separate "license" or another type of authorization that is covered by the license of the host station. The Administrative Procedure Act defines the term "license" broadly, and the Act arguably could be read to include any Commission authorization, such as an STA. 5 U.S.C. § 551(8) (defining license as "the whole or a part of an agency permit, certificate, approval, registration, charter, membership, statutory exemption or other form of permission"); 47 U.S.C. § 153(49) (defining "station license" for purposes of the Communications Act). In addition, the Act defines a full-power commercial station entitled to must carry rights on cable systems as one that is "licensed and operating on a channel regularly assigned to its community by the Commission that, with respect to a particular cable system, is within the same television market as the cable system." 47 U.S.C. § 534(h)(1)(A). But the phrase "assigned to its community" suggests that the channel must be allotted to the station's community of license in the Commission's DTV Table of Allotments. 47 CFR § 73.622(i); see also 47 CFR § 76.5(b) (defining a television broadcast station as a station "operating on a channel regularly assigned to its community by § 73.606 or § 73.622" of the Commission's rules). It is not clear whether a simulcast transmission authorized via an STA would satisfy this definition.

⁵³ See 47 U.S.C. § 309(f); 47 CFR § 73.1635(a)(4). STAs may be granted for an initial period not to exceed 180 days. In addition, a "limited number of extensions" may be granted for additional periods not exceeding 180 days

become too burdensome if a station's transition to ATSC 3.0 occurs over a period of several years? How would the use of STAs affect our ability to monitor deployment of ATSC 3.0 service and provide current information about broadcast service to the public through our licensing databases and website? Are there any other alternative approaches we should consider, including other approaches that would maintain broadcasters' existing carriage rights and allow NCE licensees to host commercial broadcasters?

3. Coverage and Signal Quality Issues Related to Local Simulcasting

23. *Impact on OTA Service Coverage of the ATSC 1.0 Signal.* We seek comment on the extent to which a Next Gen TV station should be permitted to partner with an ATSC 1.0 host simulcast station with a different service contour or community of license. Even with ATSC 1.0 simulcasting, it is possible, if not likely, that some over-the-air consumers will lose ATSC 1.0 service from stations that begin transmitting in ATSC 3.0. This is because a host simulcast station will have a different service area than the Next Gen TV (originating) station. Accordingly, we seek input on how we should ensure that there is not a significant loss of ATSC 1.0 service by Next Gen TV stations as a result of local simulcasting arrangements.⁵⁴ Petitioners argue that Next Gen TV stations should be permitted to arrange for the simulcast of their ATSC 1.0 signal on another broadcast facility "serving a substantially similar community of license."⁵⁵ We seek comment on this proposal. What does it mean to serve "a substantially similar community of license"? Should we require that the ATSC 1.0 simulcast signal at a minimum cover the Next Gen TV station's entire community of license?⁵⁶ Should we require the ATSC 1.0 simulcast signal to substantially replicate the Next Gen TV station's noise-limited service contour? If we adopt a "substantial replication" standard, what degree of existing ATSC 1.0 service loss should be permissible? We also seek comment on whether we should phase in more relaxed OTA ATSC 1.0 service restrictions as the transition progresses based on the possibility that, as ATSC 3.0 stations become more prevalent, it may become more difficult for Next Gen TV broadcasters to find suitable partners for local simulcasting.⁵⁷

24. We also seek comment on Next Gen TV broadcasters' incentives to maintain existing service coverage or quality to viewers.⁵⁸ What is the financial impact on stations that fail to maintain service coverage or quality?

per extension. 47 CFR § 73.1635(a)(4). The Commission may modify or cancel an STA at any time without prior notice or right to a hearing. *Id.* § 73.1635(b).

⁵⁴ See 47 U.S.C. § 307(b) (requiring the Commission to make a "fair, efficient, and equitable" distribution of television service when considering applications for license).

⁵⁵ Petition at 17.

⁵⁶ Under the Commission's rules, a full power television station must locate its transmitter at a site from which it can place a principal community contour over its entire community of license. See 47 CFR § 73.625. NCTA opposes permitting broadcasters to move their ATSC 1.0 signal to a transmitter outside the community they are currently licensed to serve or to a station with "inferior over-the-air coverage." NCTA Comments at 6.

⁵⁷ See also *infra* para. 33 (explaining that a change in coverage area/community of license/transmitter of a station could impact which cable systems must carry the station).

⁵⁸ Broadcasters argue that they have every incentive to maintain service to current viewers, but that they need maximum flexibility in choosing 3.0 deployment partners. See, e.g., Petitioner's Reply at 6 ("Maintaining viewership and serving viewers' needs is central to every broadcaster's interests. However, to remain viable competitors in the video programming marketplace, broadcasters must have the ability to innovate and evolve, just as their competitors do.... Because broadcasters are unlikely to have additional spectrum available to ease the transition, they must have the flexibility to manage the transition as effectively as possible."). But see DISH Comments at 3-4 ("Broadcasters ... do not appear to be concerned about the decrease in OTA coverage area because pay-TV operators retransmit broadcasters' stations to those underserved subscribers, allowing broadcasters to extend the reach of their signals while collecting retransmission fees at the same time. There is therefore no incentive for

4. Other Local Simulcast Issues

25. *Market-Wide Simulcasting Arrangements.* The Petition and other filings in the record appear to contemplate simulcasting arrangements between or among two or more stations in a market, and possibly even entire market deployment plans.⁵⁹ We seek comment on such arrangements, and what effect they may have on consumers. Should we look more favorably at arrangements among many or all broadcasters in a market? Should we encourage broadcasters to coordinate and submit for Commission consideration a market-wide plan before starting on individual deployment and simulcasting plans? Do we have the authority to require market-wide simulcast arrangements? What are the potential advantages and disadvantages of a market-based simulcast approach versus simulcasting arrangements between individual stations?

26. *NCE/LPTV/Small/Rural Broadcasters.* We seek comment on whether small, rural, low-power, and NCE broadcasters would face unique circumstances with regard to the voluntary provision of ATSC 3.0 that we should consider in this proceeding. To what extent are these categories of stations interested in offering ATSC 3.0 services, and what challenges would they face in doing so?⁶⁰ Should we encourage participation by these types of stations in ATSC 3.0 deployment plans to ensure that all broadcasters are afforded an opportunity to participate as Next Gen TV broadcasters or simulcast hosts? Will such broadcasters have difficulty finding simulcast partners in a market? For example, LPTV and Class A stations may find it difficult to host a full power originating station because they must operate at lower power levels and may not be able to adequately prevent loss of service of the full power originating station's ATSC 1.0 simulcast signal. We seek comment on whether and how an LPTV station can be a host simulcast station for a full power originating station given its power limitations and secondary status. Because of difficulties they may face in serving as hosts for full power originating stations, we seek comment on whether to allow LPTV/Class A stations the option to transition to ATSC 3.0 without simulcasting (*i.e.*, "flash-cut" to ATSC 3.0). If we were to permit LPTV/Class A stations to flash-cut to ATSC 3.0, what impact would the lack of simulcasting have on the viewing public? How should the prevalence of equipment that could receive an ATSC 3.0 signal among consumers in the viewing community affect the ability of LPTV/Class A stations to flash-cut? We also note that, unlike full power stations, LPTV/Class A stations do not have a community of license coverage requirement.⁶¹ If we were

broadcasters to preserve or extend the OTA reach of their signals as they transition to different broadcasting technologies, necessitating Commission action to protect consumers who rely on OTA service.”).

⁵⁹ See Petition at 17-8 (“Stations electing to deploy Next Generation TV will enter into market-by-market deployment plans that will rely on local simulcasting agreements to ensure the ongoing availability of programming in the current DTV format. Specifically, a temporary “host” broadcaster would agree to carry on its DTV subchannels the programming of those stations broadcasting with the Next Generation TV format. The “host” station’s programming would be carried reciprocally as a programming stream on one of the stations deploying the Next Generation TV standard.”). See also Letter from Gerald J. Waldron, Counsel to Pearl TV, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 16-142, at 3 (filed Dec. 14, 2016) (Pearl Dec. 14, 2016 *Ex Parte* Letter).

⁶⁰ One of the Joint Petitioners is America’s Public Television Stations (APTS), which represents “the overwhelming majority of public television stations nationwide.” Petition at 1, n.1. According to APTS, in addition to continuing to provide educational television programming, public television stations are “eager to embrace the non-broadcast datacasting opportunities that Next Gen presents to enhance the public services” public television stations offer. Letter from Lonna Thompson, Executive Vice President, Chief Operating Officer and General Counsel, APTS, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 16-142, at 1 (filed Aug. 10, 2016). In addition, the LPTV Spectrum Rights Coalition states that it supports the Petitioners’ goal of a rapid rulemaking to permit use of the ATSC 3.0 standard, but urges the Commission, among other issues, to ensure that the displacement process for LPTV and TV translators after the incentive auction is not harmed and that LPTV and TV translator concerns are carefully considered in this rulemaking. See LPTV Spectrum Rights Coalition Comments at 1-3.

⁶¹ See *Implementation of Section 309(j) of the Communications Act – Competitive Bidding for Commercial Broadcast and Instructional Television Fixed Service Licenses*, First Report and Order, 13 FCC Rcd 15920, 15963,

to require an LPTV station seeking to transition to ATSC 3.0 to simulcast, what, if any, kind of community coverage requirement should we impose for the simulcast ATSC 1.0 stream? Instead of a simulcast coverage requirement, should we instead apply the existing 30-mile and contour overlap restrictions that apply to LPTV/Class A moves to LPTV/Class A stations that propose to move their ATSC 1.0 stream as part of their transition to ATSC 3.0?⁶²

27. *Potential Simulcasting Sunset.* If we approve a voluntary transition to ATSC 3.0 that implements a simulcast approach, we propose that the Commission decide in a future proceeding when it would be appropriate for broadcasters to stop simulcasting in ATSC 1.0. We seek comment on this proposal. We note that all parties to this proceeding appear to agree that this issue should be handled in a separate proceeding.⁶³

C. MVPD Carriage

28. We propose that MVPDs must continue to carry broadcasters' ATSC 1.0 signals, pursuant to their statutory mandatory carriage obligations, and that MVPDs will not be required to carry broadcasters' ATSC 3.0 signals during the period when broadcasters are voluntarily implementing ATSC 3.0 service. We seek comment on these proposals, the legal basis for according carriage rights in this manner, and how to implement such carriage rights.⁶⁴ We also seek comment on issues related to the voluntary carriage of ATSC 3.0 signals through the retransmission consent process.

29. The Petitioners state that MVPDs "should not be obligated to carry" a Next Gen TV broadcaster's ATSC 3.0 signal and that MVPDs could satisfy their obligation to carry a Next Gen TV station's signal by carrying the station's ATSC 1.0 signal.⁶⁵ In response to the Petition, MVPDs explain that they are not currently capable of receiving and retransmitting ATSC 3.0 signals⁶⁶ and raise numerous questions about MVPD carriage of ATSC 3.0 signals,⁶⁷ including the potentially significant costs and burdens associated with MVPD carriage of ATSC 3.0 signals.⁶⁸ In particular, MVPDs observe that the

para. 115, n.109 (1998); *Establishment of a Class A Television Service*, Report and Order, 15 FCC Rcd 6355, 6367, para. 28 (2000).

⁶² See 47 CFR § 74.787(b).

⁶³ See Letter from Rick Kaplan, General Counsel and Executive Vice President, Legal and Regulatory Affairs, NAB, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 16-142, at 2 (filed Dec. 8, 2016) (NAB Dec. 8, 2016 *Ex Parte* Letter). On the other hand, ATVA has raised questions concerning the potential cessation of ATSC 1.0 signals. See ATVA Dec. 2, 2016 *Ex Parte* Letter at 4.

⁶⁴ See 47 U.S.C. §§ 338, 534, 535.

⁶⁵ See Letter from Lonna Thompson, Executive Vice President, Chief Operating Officer and General Counsel, APTS, *et al.*, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 16-142, at 1 (filed May 26, 2016) (Petitioners' May 26, 2016 *Ex Parte* Letter) ("MVPDs should not be obligated to carry a Next Generation signal under our framework. Because broadcasters will maintain over-the-air transmissions using the current DTV standard, MVPDs that receive broadcast content via these over-the-air transmissions will continue to do so."); Appendix A (revising its proposed rule changes to state that an MVPD "may satisfy its carriage obligation for a television station ... by carrying the station's transmission of its [ATSC 1.0] signal....").

⁶⁶ See, *e.g.*, Letter from Rick Chessen, Senior Vice President, Law and Regulatory Policy NCTA, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 16-142, at 1 (filed Oct. 17, 2016) (NCTA Oct. 17, 2016 *Ex Parte* Letter) ("cable operators use a different transmission technology with which ATSC 3.0 is not compatible"); AT&T and DISH Dec. 5, 2016 *Ex Parte* Letter (noting that satellite "carriage of an ATSC 3.0 signal would require new equipment at each local receive facility and could potentially require new consumer set-top boxes").

⁶⁷ See, *e.g.*, ATVA Dec. 2, 2016 *Ex Parte* Letter at 4-7.

⁶⁸ See, *e.g.*, AT&T and DISH Dec. 5, 2016 *Ex Parte* Letter at 1 ("Because many aspects of the ATSC 3.0 standard have yet to be finalized and approved, it is difficult to predict at this time the cost of new or modified equipment, let alone test such equipment to verify compatibility with our platforms."); ACA Comments at 7 (stating that "carriage

ATSC's work on the new 3.0 standard is not yet complete, including the development of recommended standards for MVPD carriage of ATSC 3.0 signals,⁶⁹ and that the record is scarce about the practical aspects of MVPD carriage of ATSC 3.0 signals.⁷⁰ Therefore, MVPDs ask the Commission to consider the implications for MVPDs before authorizing broadcasters to use the new standard. In particular, MVPDs ask us to ensure that they do not bear the costs associated with carrying ATSC 3.0 signals and ATSC 1.0 simulcasts, even when such carriage occurs pursuant to retransmission consent negotiations.⁷¹

30. The Communications Act establishes slightly different thresholds for mandatory carriage depending on whether the television station is full power or low-power, or commercial or noncommercial, and also depending on whether carriage is sought by a cable operator or satellite carrier.⁷² The must-carry rights of commercial stations on cable systems are set forth in Section 614 of the Act.⁷³ The must-carry rights of full power noncommercial stations on cable systems are set forth in Section 615 of the Act.⁷⁴

of ATSC 3.0 will require cable operators to purchase a variety of new equipment and devote additional capacity to broadcast carriage.”), 9-10 (“This transition may be significantly more complex and costly for small cable operators seeking to retransmit ATSC 3.0 signals. The Commission cannot decide to transition to the new standard-even on a ‘permissive’ basis-without considering the full costs such a transition would entail. These include the cost of new equipment, the costs associated with receiving a ‘good quality signal’ delivered by the broadcaster to the cable headend, and the opportunity cost of devoting additional bandwidth for ATSC 3.0.”).

⁶⁹ Notably, an ATSC working group called TG3/S37, the “Specialist Group on Conversion and Redistribution of ATSC 3.0 Service,” is currently developing “Recommended Practices, Standards, and other documents relating to the conversion and redistribution of ATSC 3.0 services.” *See, e.g.*, ATVA Dec. 2, 2016 *Ex Parte* Letter at 2 (observing that “ATSC recently formed a new subgroup that is supposed to ‘develop[] and maintain[] Recommended Practices, Standards, and other documents relating to the conversion and redistribution of ATSC 3.0 services.’”); NCTA Comments at 8-9 (observing that “serious consideration of technical issues regarding cable carriage of the ATSC 3.0 signal are still on-going at the ATSC committee level.”). *See also* ATSC’s ATSC 3.0 Technology Standards Group (TG3), <http://atsc.org/subcommittees/technology-group-3/> (visited Jan. 4, 2017).

⁷⁰ *See, e.g.*, ATVA Dec. 2, 2016 *Ex Parte* Letter at 2 (“It is hard to fully grasp the complete range of issues arising from the proposed transition, moreover, in part because the ATSC 3.0 standard remains under development. Before promulgating new rules implementing the ATSC 3.0 standard, the Commission should understand the consequences of the proposed transition and carefully weigh the costs and benefits associated with it.”)

⁷¹ *See, e.g.*, ATVA Dec. 2, 2016 *Ex Parte* Letter at 3.

⁷² *See* 47 U.S.C. §§ 338, 534, 535.

⁷³ *Id.* § 534. Pursuant to Section 614(a), “[e]ach cable operator shall carry, on the cable system of that operator, the signals of local commercial television stations . . . as provided by this section.” *Id.* § 534(a). The term “local commercial television station” means “any full power television broadcast station, other than a qualified noncommercial educational television station . . . licensed and operating on a channel regularly assigned to its community by the Commission that, with respect to a particular cable system, is within the same television market as the cable system.” *Id.* § 534(h)(1)(A). “Television market” is defined by Commission’s rules as a Designated Market Area (DMA). 47 CFR §§ 76.55(e)(2); 47 U.S.C. 534(h)(1)(C)(i). The must-carry rights of low power stations, including Class A stations, on cable systems are set forth in Section 614(c) of the Act. 47 U.S.C. § 534(c). Under very narrow circumstances, such stations can become “qualified” and eligible for must carry. *Id.* § 534(h)(2). Among the several requirements for reaching “qualified” status with respect to a particular cable operator, the station must be “located no more than 35 miles from the cable system’s headend.” *Id.* § 534(h)(2)(D).

⁷⁴ 47 U.S.C. § 535. Section 615(a) provides that “each cable operator of a cable system shall carry the signals of qualified noncommercial educational television stations in accordance with the provisions of this section.” *Id.* § 535(a). A qualified noncommercial educational station can be considered “local,” and thus eligible for mandatory carriage on a cable system, in one of two ways. It may either be licensed to a principal community within 50 miles of the system’s headend, or place a “Grade B” (noise-limited service contour) signal over the headend. *Id.* § 535(1)(2).

The mandatory carriage rights of full power stations (both commercial and noncommercial) on satellite carriers are set forth in Section 338 of the Act.⁷⁵

1. Mandatory Carriage Issues

31. Broadcasters and MVPDs appear to agree on the premise that MVPDs must continue to carry broadcasters' ATSC 1.0 signals, pursuant to their statutory mandatory carriage obligations, and that MVPDs should not be required to carry broadcasters' ATSC 3.0 signals at this time.⁷⁶ The Petition, however, does not clearly explain the legal basis for achieving this result. In addition, our legal basis for according mandatory carriage rights to ATSC 1.0 simulcast streams may depend on whether, as discussed above in the Local Simulcasting Section, such streams will be temporary shared channels separately licensed to the originating broadcaster, or, alternatively, will be multicast streams broadcast by a "host" licensee. We seek comment on how to implement carriage rights and obligations under both approaches, or under any other approach we should consider.

32. *ATSC 1.0 Simulcast Carriage Rights Under a Licensed Approach.* First, we seek comment on how to implement mandatory carriage rights of an ATSC 1.0 simulcast stream under a licensed simulcast approach. Under this approach, two stations that have a reciprocal simulcast arrangement would each have licenses for their ATSC 1.0 and ATSC 3.0 streams, but we would accord mandatory carriage rights only to the ATSC 1.0 stream for each station. This approach would be consistent with prior Commission proposals in the channel sharing context and precedent established in the DTV transition. We seek comment on whether these proposals and precedent should be applied in the context of a licensed simulcast approach. For channel sharing outside the context of the incentive auction, the Commission has tentatively concluded that both licensees of a shared channel would have carriage rights and that such carriage rights would be based on the shared location.⁷⁷ In the DTV context, the Commission addressed whether cable operators were required under the Communications Act to carry both the digital and analog signals of a station (also referred to as "dual carriage") during the DTV transition when television stations were still broadcasting analog signals. With regard to licensees that were simultaneously broadcasting analog and digital signals, the Commission declined to establish "dual carriage" rights, deciding that analog signals would have mandatory carriage rights during the transition

⁷⁵ *Id.* § 338. A full power "television broadcast station" is entitled to request carriage by a satellite carrier any time that carrier relies on the statutory copyright license in 17 U.S.C. § 122 to retransmit the signal of any other "local" station (*i.e.*, one located in the same DMA). 47 U.S.C. § 338(a)(1) ("[e]ach satellite carrier providing ... secondary transmissions to subscribers located within the local market of a television broadcast station of a primary transmission made by that station shall carry upon request the signals of all television broadcast stations located within that local market..."). This is commonly referred to as the "carry one, carry all" requirement. *See also* 47 U.S.C. § 338(k)(4); 17 U.S.C. § 122(j)(2); 47 CFR § 76.66(e) (defining local market). A "television broadcast station" is defined as "an over-the-air commercial or noncommercial television broadcast station licensed by the Commission." 47 U.S.C. §§ 338(k)(10), 325(b)(7). Low-power stations, including Class A stations, do not have satellite carriage rights. *Id.* § 338(a)(3).

⁷⁶ *See supra* para. 29. *See also, e.g.*, NCTA Comments at 2 (stating the Commission should find that "[c]able operators have no legal obligation to carry the ATSC 3.0 signal during the transition" and that "[c]arriage of an ATSC 1.0 signal will continue to fulfill cable operators' obligations during the transition and broadcasters must continue to provide a good quality ATSC 1.0 signal to the cable headend during the transition period."); DISH Comments at 7 ("[P]ay-TV providers should not be required to carry any ATSC 3.0 transmission under mandatory carriage rules.").

⁷⁷ *See Channel Sharing NPRM*, 30 FCC Rcd at 6681-85, paras. 33-42 ("Nothing in the Communications Act requires a station to occupy an entire six megahertz channel in order to be eligible for must carry rights; rather, the station must simply be a licensee eligible for carriage under the applicable provision of the Communications Act. Thus, the carriage rights conferred by Sections 614, 615, and 338 of the Act apply to channel sharees as they do to any other licensee. . . . We tentatively conclude that, under the statutory definitions outlined above, the sharee station's carriage rights would be determined at the new shared location.").

and that digital signals would not.⁷⁸ That is, a broadcaster would choose between must carry or retransmission consent for its analog signal but could only pursue carriage via retransmission consent for its digital signal.

33. Similarly, under the licensed simulcast approach, we could conclude that a broadcaster would choose between must carry or retransmission consent for its ATSC 1.0 signal but could only pursue carriage via retransmission consent for its ATSC 3.0 signal. By relying on the ATSC 1.0 signal for establishing mandatory carriage rights, this approach avoids having to address at this time issues associated with mandatory carriage of ATSC 3.0 signals.⁷⁹ Under this approach, a broadcaster's mandatory carriage rights would track its relocated ATSC 1.0 simulcast channel.⁸⁰ That is, if a broadcaster converts its current facility to ATSC 3.0 operation and enters a temporary channel sharing arrangement to simulcast its ATSC 1.0 stream at a new location, then the broadcaster's ATSC 1.0 carriage rights would be based on the new shared location. We seek comment on this approach, including its advantages and disadvantages. We also seek comment on the implications of mandatory carriage rights following the ATSC 1.0 simulcast to a new location, especially in situations involving a significant shift in the ATSC 1.0 coverage area or change in transmitter location or community of license.⁸¹ Alternatively, could we find that, although a licensed ATSC 1.0 stream is subject to mandatory carriage, carriage rights would be determined from the location of the originating station, rather than the location of the host station?⁸²

34. *ATSC 1.0 Simulcast Carriage Rights Under a Multicast Approach.* We also seek comment on whether, and if so how, we could implement mandatory carriage rights and obligations for a station's ATSC 1.0 signal under a multicast approach to simulcasting. We note that the Commission does not require cable operators to carry any more than one programming stream of a digital television station that multicasts.⁸³ Accordingly, we seek comment on the legal basis for requiring mandatory carriage of a station's ATSC 1.0 simulcast stream if that stream is broadcast by a host station as one of its multicast streams. For purposes of this discussion, take the example of a reciprocal simulcast arrangement between two stations. That is, if Station A is licensed on channel 5 and Station B is licensed on channel 9, Station

⁷⁸ See *Carriage of Digital Television Broadcast Signals: Amendment to Part 76 of the Commission's Rules*, Second Report and Order and First Order on Reconsideration, 20 FCC Rcd 4516, 4522-4, paras. 13, 15 (2005) (*DTV Must-Carry Second R&O*). The Commission concluded, in the absence of a clear statutory requirement for dual carriage, it would not impose such burdens on cable operators' free speech. *Id.* at 4530, para 27.

⁷⁹ See, e.g., NCTA Comments at 9 ("So long as a broadcaster continues to deliver a good quality signal using ATSC 1.0 transmission to the headend, the FCC need not define a good quality signal for ATSC 3.0 at this time.")

⁸⁰ See *Channel Sharing NPRM*, 30 FCC Rcd at 6683, para. 40 ("We tentatively conclude that, under the statutory definitions outlined above, the sharee station's carriage rights would be determined at the new shared location.")

⁸¹ Full-power stations generally are entitled to coverage throughout their DMAs, so a shift in coverage area, community of license, or transmitter of a full-power station is unlikely to change which cable systems must carry the station, provided there is no change in DMA. See 47 U.S.C. §§ 534 (cable carriage of a commercial station), 338 (satellite carriage of a commercial station), 47 CFR §§ 76.66(e), 76.55(e)(2). Non-commercial educational and LPTV stations' cable carriage rights are determined based on the distance of the community of license or transmitter, respectively, from the cable headend. So a change in community of license or transmitter could affect which cable systems must carry an NCE or LPTV station. See 47 U.S.C. §§ 534(h)(2) (cable carriage of qualified low power stations), 535(l)(2) (cable carriage of NCE stations).

⁸² We note that a broadcaster that voluntarily relinquishes its spectrum usage rights in the incentive auction in order to channel share "is entitled to the same cable and satellite carriage rights at its shared location as it would have at that same location were it not channel sharing." *Incentive Auction Report and Order*, 29 FCC Rcd at 6856, para. 706 (citing 14 U.S.C. § 1452(a)(4)).

⁸³ *DTV Must-Carry Second R&O*, 20 FCC Rcd at 4518, para. 3 (affirming prior decision not to impose multicast carriage obligations based on available record).

A would transmit on channel 5 two programming streams in ATSC 1.0 (its own and Station B's simulcast), while Station B would transmit on channel 9 two programming streams in ATSC 3.0 (its own and Station A's simulcast). There appears to be no question that Station A in this example would retain carriage rights for its ATSC 1.0 signal, however, there is a question as to whether Station B, which is transmitting in ATSC 3.0 on its licensed channel, would be entitled to must carry rights for its ATSC 1.0 simulcast stream, which is being transmitted as a multicast stream by Station A.⁸⁴ This is because the Commission has determined that only a station's primary stream is entitled to mandatory carriage and that multicast streams are not entitled to mandatory carriage and because Station B's ATSC 1.0 stream is not being transmitted on its licensed channel.⁸⁵

35. We seek comment on whether we could accord carriage rights to an ATSC 1.0 simulcast that is being transmitted as a multicast stream of a host station. Is there a legal basis for shifting the carriage obligation from the licensed ATSC 3.0 stream to the simulcast ATSC 1.0 stream? The record reflects that MVPDs may not have the technical capability to receive or retransmit ATSC 3.0 signals for some time during the transition to ATSC 3.0, and that ATSC 3.0 signals could occupy more bandwidth than ATSC 1.0 signals.⁸⁶ Accordingly, as discussed below, we believe that carriage of ATSC 3.0 signals should be voluntary and driven by marketplace negotiations between broadcasters and MVPDs. Can we interpret the statute to require broadcasters to deliver their signals to MVPDs in a manner that minimizes burdens for MVPDs? Could we find that a Next Gen TV broadcaster must effectuate the carriage rights of its ATSC 3.0 signal by delivering an ATSC 1.0 signal to the MVPD via local simulcasting or some other means?⁸⁷ Under this approach, do we need to define a "good quality" digital television signal at the cable system's principal headend for purposes of carriage?⁸⁸ In order to use the ATSC 1.0 simulcast to

⁸⁴ 47 U.S.C. § 534(a) ("each cable operator shall carry . . . the signals of local commercial television stations"); 47 U.S.C. § 534(h)(1)(A) (defining a "local commercial television station" entitled to must carry rights on cable systems as one that is "licensed and operating on a channel regularly assigned to its community by the Commission that, with respect to a particular cable system, is within the same television market as the cable system").

⁸⁵ 47 U.S.C. § 534(h)(1)(A). See *DTV Must-Carry Second R&O*, 20 FCC Rcd at 4518, para. 3 (declining to require cable systems to carry a licensee's multicast streams); see also *Carriage of Digital Television Broadcast Signals: Amendment to Part 76 of the Commission's Rules*, First Report and Order and FNPRM, 16 FCC Rcd 2598 (2001) (*Cable DTV Must Carry Order*). In the *DTV Must-Carry Second R&O*, the Commission affirmed its decision in the First Report and Order to interpret the statutory term "primary video" to mean a single programming stream. If a digital broadcaster elects to divide its digital spectrum into several separate programming streams, only one of these streams is entitled to mandatory carriage. *DTV Must-Carry Second R&O*, 20 FCC Rcd at 4530-7, paras. 28-44.

⁸⁶ AT&T and DISH Dec. 5, 2016 *Ex Parte* Letter at 1 ("Because many aspects of the ATSC 3.0 standard have yet to be finalized and approved, it is difficult to predict at this time the cost of new or modified equipment, let alone test such equipment to verify compatibility with our platforms. . . . We explained that the bandwidth required to carry one ATSC 3.0 4K channel, for example, will consume substantially more bandwidth than a current HD channel, let alone the bandwidth that would be required to carry both an ATSC 3.0 4K signal and an ATSC 3.0 signal."); ATVA Dec. 2, 2016 *Ex Parte* Letter at 7 ("How much additional bandwidth will ATSC 3.0 carriage (including 4k carriage) consume on MVPD systems?").

⁸⁷ See, e.g., *Jovon Broad. Corp. v. RCN Corp.*, 18 FCC Rcd 8145, 8147, paras. 9-10 (MB 2003) (*Jovon*) (approving a broadcast station's use of its digital signal to deliver a good quality signal to the cable headend, even though the cable system was required to carry the analog signal).

⁸⁸ The Commission has determined that -61 dBm is the signal level necessary to provide a good quality digital television signal at a cable system's principal headend and at a satellite carrier's local receive facility. See *Cable DTV Must Carry Order*, 16 FCC Rcd at 2617, paras. 44-46; *Carriage of Digital Television Broadcast Signals: Amendments to Part 76 of the Commission's Rules*, Second Report and Order, 23 FCC Rcd 5351, 5362, para. 18 (2008) (*Satellite DTV Carriage Order*). Petitioners request that we "specify that the definition of 'good quality signal' will be identical for Next Generation TV and current DTV stations, given that Next Generation TV contours will be essentially identical to existing station contours." Petition at 18-19. NCTA states that this "ignores the

effectuate the carriage rights of its ATSC 3.0 signal, should we require the ATSC 1.0 simulcast and the ATSC 3.0 signal to have identical content?⁸⁹

36. *Mandatory Carriage of ATSC 3.0 Signals.* We note that consideration of technical issues regarding cable carriage of the ATSC 3.0 signal is still ongoing at the ATSC Working Group.⁹⁰ Given that ATSC 3.0 signals would not be accorded mandatory carriage rights under our proposals, and because of the current uncertainty about how MVPDs would carry ATSC 3.0 signals as a technical matter, we tentatively conclude that it is premature to address questions related to the mandatory carriage of ATSC 3.0 streams at this stage. We seek comment on this tentative conclusion.

37. *Required Notice to MVPDs of ATSC 3.0 Transition/ ATSC 1.0 Simulcast.* We seek comment on the notice that Next Gen TV broadcasters that have elected must-carry rights must provide to MVPDs prior to transitioning to ATSC 3.0 and arranging for an ATSC 1.0 simulcast. The Petition proposes that must-carry broadcasters should give notice to all MVPDs at least 60 days in advance of simulcasting in ATSC 1.0 format (*i.e.*, relocating ATSC 1.0 streams to another facility).⁹¹ MVPDs express concern about the adequacy of such notice.⁹² We seek comment on what appropriate notice would be.

38. We seek comment on what the notice to MVPDs should contain. We note that in the *Channel Sharing NPRM*, the Commission proposed a number of notice requirements on stations participating in channel sharing agreements (CSAs).⁹³ We proposed that stations participating in CSAs must provide notice to those MVPDs that: (1) no longer will be required to carry the station because of the relocation of the station; (2) currently carry and will continue to be obligated to carry a station that will change channels; or (3) will become obligated to carry the station due to a channel sharing relocation. We also proposed that the notice contain the following information: (1) date and time of any channel changes; (2) the channel occupied by the station before and after implementation of the CSA; (3) modification, if any, to antenna position, location, or power levels; (4) stream identification information; and (5) engineering staff contact information. In addition, we proposed that stations be able to elect whether to provide notice via a letter notification or provide notice electronically, if pre-arranged with the relevant MVPD. We seek comment on whether we should adopt requirements modeled on these proposals in this proceeding. If not, we seek comment on how the requirements we adopt should differ and why. We also seek comment on how broadcasters will deliver their signals to MVPDs that carry the

significant differences between the two transmissions for these purposes,” and that we “need not define a good quality signal for ATSC 3.0 at this time.” NCTA Comments at 8-9.

⁸⁹ The Act requires MVPDs to “carry . . . the signals of local commercial television stations.” 47 U.S.C. § 534(a); It is not clear if the MVPD would meet this requirement by carrying different content on the ATSC 1.0 stream from the content broadcast on the ATSC 3.0 signal. *See Jovon*, 18 FCC Rcd at 8147, para. 9 (allowing station entitled to carriage rights for its analog signal to use its digital signal to deliver a good quality signal to the cable headend, but providing that the station must “transmit[] exactly the same content over its digital signal as is contained in its analog signal”); *Educational Public TV Corporation v. RCN-BecoCom*, 19 FCC Rcd 16280, 16281-84 paras. 5, 9 (MB 2004).

⁹⁰ ATSC Technology Group 3, Subcommittee 37 is tasked with how to “conver[t] and redistribut[e]” ATSC 3.0 signals over MVPD networks. *See* ATSC, Technology Group 3, <http://atsc.org/subcommittees/technology-group-3/> (last visited Jan. 25, 2017).

⁹¹ Petition at 19.

⁹² NCTA Comments at 8; AT&T Comments at 3 (“[I]t is essential that a broadcaster provide affected MVPDs with sufficient notice of a Next Generation TV-caused change to its channels and commit to adhering to a mutually agreeable schedule to implement such a change to avoid consumer disruption. This cooperation is critical because some MVPDs may have to coordinate such channel changes nationwide.”).

⁹³ *See Channel Sharing NPRM*, 30 FCC Rcd at 6689-90, para 60.

station if the broadcaster's ATSC 1.0 simulcast does not deliver a good quality signal to the headend; for example, will they use some alternate means, such as fiber or microwave?⁹⁴

2. Retransmission Consent Issues

39. *Voluntary Carriage of ATSC 3.0 Signals Through Retransmission Consent.* We also seek comment on issues related to the voluntary carriage of ATSC 3.0 signals through the retransmission consent process. The Petitioners contemplate that, at some future time, MVPDs will want to negotiate for carriage of ATSC 3.0 signals via retransmission consent so that MVPDs can offer their customers the improved service and new features associated with ATSC 3.0 service.⁹⁵ As discussed above, MVPDs claim that they are not prepared to carry ATSC 3.0 signals at this time.⁹⁶ MVPDs, therefore, express concern that broadcasters may use the retransmission consent process to compel MVPDs to upgrade their equipment before they are ready to do so in order to carry ATSC 3.0 signals.⁹⁷ They have expressed concern about the costs associated with carriage of ATSC 3.0 signals and that, even if ATSC 3.0 carriage is deemed "voluntary," Next Gen broadcasters will use their "leverage" to require MVPD ATSC 3.0 carriage (such as by tying ATSC 3.0 carriage to ATSC 1.0 carriage).⁹⁸ In response, broadcasters reassert that MVPDs will not be forced to carry ATSC 3.0 signals.⁹⁹ Broadcasters also argue that larger MVPDs, such as AT&T, do not lack negotiating power in retransmission consent negotiations and that retransmission consent agreements for ATSC 3.0 signals should be left to marketplace negotiations.¹⁰⁰ We seek comment on these MVPD concerns, including whether and/or how the good faith rules concerning retransmission consent should and/or could be applied and/or adapted to address them.¹⁰¹

⁹⁴ See ACA Comments at 17-20.

⁹⁵ Petitioners' Reply at 5-6 ("If an MVPD chooses to offer its customers the improved quality of service and new features that broadcasters can provide using the Next Generation TV standard, this will be the MVPD's choice, and interested parties can address such carriage through negotiations.").

⁹⁶ See *supra* para. 29.

⁹⁷ See, e.g., AT&T and DISH Dec. 5, 2016 *Ex Parte* Letter at 1 (asking the Commission "to ensure that, among other things, broadcasters cannot use the retransmission consent process to require MVPDs to carry the ATSC 3.0 signal."); ATVA Dec. 2, 2016 *Ex Parte* Letter at 3-4 ("MVPDs do not necessarily enter into the terms of their retransmission consent agreements on a strictly 'voluntary' basis. Any station group with sufficient leverage to compel carriage of unwanted programming or to raise consumer prices by 40 percent per year possesses sufficient leverage to compel carriage of ATSC 3.0 signals as well – either directly or through 'standalone' offers that represent an obviously unreasonable alternative"). ATVA also states that "the Commission should want to understand whether the proposed transition would allow broadcasters to collect the benefits of the transition (e.g., new, monetizable services) while externalizing much of the associated costs to others." ATVA Dec. 2, 2016 *Ex Parte* Letter at 4.

⁹⁸ ATVA Dec. 2, 2016 *Ex Parte* Letter at 3.

⁹⁹ See, e.g., Letter from Rebecca Hanson, SVP, Strategy and Policy, Sinclair, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 16-142, at 2 (filed Dec. 13, 2016) ("It is not in any broadcaster's interest to demand carriage of programming streams that an MVPD is incapable of carrying."); Petitioners' Reply at 11 ("Because MVPDs will not be required to carry Next Generation TV signals, and can fulfill their must-carry obligations by carrying a simulcast ATSC 1.0 signal, the Commission need not consider what burdens forced carriage of Next Generation TV would impose on MVPDs.").

¹⁰⁰ See, e.g., Letter from Rick Kaplan, General Counsel and Executive Vice President, Legal and Regulatory Affairs, NAB, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 16-142, at 1-2 (filed Dec. 14, 2016) ("The notion that any local broadcaster could force AT&T to do anything is comical.").

¹⁰¹ 47 U.S.C. § 325(b)(1), (b)(3)(C). The Commission has implemented the statutory good faith retransmission consent negotiation provisions by adopting a two-part framework for evaluating good faith in this context. First, the Commission established – and has since added to – a list of objective good faith negotiation standards, the violation of each of which is considered a *per se* breach of the duty to negotiate retransmission consent in good faith. The

40. We also seek comment on what other issues we may need to resolve with regard to the potential carriage of ATSC 3.0 signals given that MVPDs and broadcasters may negotiate such carriage privately via retransmission consent. For example, we seek comment on whether it is appropriate for us to address concerns ATVA has raised about patent royalties that may be associated with ATSC 3.0 service.¹⁰² What equipment would be necessary for an MVPD to carry an ATSC 3.0 stream on a voluntary basis, and should we take those equipment needs into consideration in this proceeding?

41. Alternatively, should we consider prohibiting MVPD carriage of ATSC 3.0 signals through retransmission consent negotiations until the ATSC Specialist Group on Conversion and Redistribution of ATSC 3.0 Service produces its initial report, which is expected later this year? What would be the benefits and detriments of such an approach? What would be the legal basis for such a restriction? Would such a prohibition be consistent with Section 325(b), including the reciprocal good faith bargaining requirements, the First Amendment rights of MVPDs and broadcasters, and Section 624(f)?¹⁰³

D. Service and Interference Protection

42. The proposed authorization of the ATSC 3.0 transmission standard raises three potential interference issues that we address in this section. First, we consider the issue of interference that ATSC 3.0 signals may cause to ATSC 1.0 (DTV) signals. Second, we consider the issue of interference that DTV or other ATSC 3.0 signals may cause to ATSC 3.0 signals. Next, we consider the issue of interference that ATSC 3.0 signals may cause to non-television services that operate within or adjacent to the TV band. As set forth below, with respect to all of these issues we propose to treat ATSC 3.0 signals as though they were DTV signals with identical technical parameters, largely consistent with the Petitioners' request.¹⁰⁴ We seek comment on whether we should modify any technical parameters based on physical differences between the ways that broadcasters would deliver DTV and ATSC 3.0 signals. Finally, we propose to amend the Post-Transition DTV Station Interference Protection rule¹⁰⁵ to allow

current *per se* standards are listed in 47 CFR § 76.65(b)(2). Second, even if the specific *per se* standards are met, the Commission may consider whether a party has failed to negotiate in good faith based on the totality of the circumstances. *See* 47 CFR § 76.65(b)(1). Under the totality of the circumstances test, the Commission may consider complaints "alleging that specific retransmission consent proposals are sufficiently outrageous, or evidence that differences among MVPD agreements are not based on competitive marketplace considerations, as to breach a broadcaster's good faith negotiation obligation," and not "complaints which merely reflect commonplace disagreements encountered by negotiating parties in the everyday business world." *Implementation of the Satellite Home Viewer Improvement Act of 1999, Retransmission Consent Issues: Good Faith Negotiation and Exclusivity*, First Report and Order, 15 FCC Rcd 5445, 5458, para. 32 (2000). Section 325 also provides that entering "into retransmission consent agreements containing different terms and conditions, including price terms," is not a violation of the duty to negotiate in good faith "if such different terms and conditions are based on competitive marketplace considerations." 47 U.S.C. §325(b)(3)(C)(ii). Since the Commission implemented the good faith negotiation requirement, it has taken further actions to facilitate the fair and effective conduct and completion of retransmission consent negotiations. *See Amendment of the Commission's Rules Related to Retransmission Consent*, Notice of Proposed Rulemaking, 26 FCC Rcd 2718 (2011) (2011 NPRM); *Amendment of the Commission's Rules Related to Retransmission Consent*, Report and Order and Further Notice of Proposed Rulemaking, 29 FCC Rcd 3351 (2014) (new *per se* rule addressing joint negotiations); *Implementation of Sections 101, 103 and 105 of the STELA Reauthorization Act of 2014*, Order, 30 FCC Rcd 2380 (2015) (implementing Section 103 of STELAR).

¹⁰² *See* ATVA Dec. 2, 2016 *Ex Parte* Letter at 5.

¹⁰³ 47 U.S.C. § 544(f) ("Any Federal agency, State, or franchising authority may not impose requirements regarding the provision or content of cable services, except as expressly provided in this subchapter."). *See also United Video v. FCC*, 890 F.2d 1173, 1189 (DC Cir 1989) (holding that Section 624(f) relates to content-based rules and that the syndicated exclusivity rules did not violate Section 624(f) because they are not content-based).

¹⁰⁴ Petition at 15-17.

¹⁰⁵ 47 CFR § 73.616(e)(1).

updated population inputs in processing applications, consistent with the Commission's decision to use such inputs in the incentive auction and repacking process.¹⁰⁶

1. Interference Protection of ATSC 1.0 (DTV) Signals

43. The Petitioners submitted a study that includes laboratory measurements of ATSC 1.0 (DTV) and ATSC 3.0 interference signals into six DTV receivers. They claim that the study demonstrates the similarity between the two standards in terms of potential interference to DTV.¹⁰⁷ The Petitioners state that the RF emission mask and effective radiated power limits for the ATSC 3.0 signal should remain unchanged and proposed that no changes be made to the OET Bulletin No. 69 planning factors which define service and interference to a DTV signal.¹⁰⁸ Therefore, for purposes of determining whether an ATSC 3.0 signal interferes with any DTV signals, the Petitioners propose to calculate potential ATSC 3.0 interference to DTV signals using the same methodology and planning factors that the Commission presently uses for calculating potential DTV interference to other DTV signals, which are specified in OET Bulletin No. 69 in our rules.¹⁰⁹

44. We propose to apply the methodology and planning factors specified in OET Bulletin No. 69 to calculate interference from ATSC 3.0 to DTV signals. We seek comment on whether DTV operations would be sufficiently protected by the OET Bulletin No. 69 methodology and planning factors. Accordingly, we request specific comment and test measurement results that accurately reflect DTV receiver performance in the presence of an interfering ATSC 3.0 signal, either to support or refute the Petitioners' measurements and claims that these two standards may be considered equally in terms of the potential interference to DTV. Given the studies that we have before us, we tentatively conclude that it is appropriate to propose to calculate interference from ATSC 3.0 signals to DTV in accordance with Sections 73.622, 73.623 and 74.703 of the Commission's rules and as implemented by OET Bulletin No. 69.¹¹⁰ We seek comment on this proposal.

2. Service and Interference Protection of ATSC 3.0 Signals

45. With respect to protection that ATSC 3.0 signals should receive from other signals, we propose to rely on OET Bulletin No. 69 as well, as Petitioners request. As discussed below, we propose to use the same methodology and planning factors defined for DTV to define the service area of an ATSC 3.0 signal. We also propose to define the ATSC 3.0 interference criteria for co- and adjacent channel interfering signals at the same levels as specified in OET Bulletin No. 69 for DTV signals. We seek comment below on how the Commission should consider implementing these service and interference protections for ATSC 3.0 signals.

¹⁰⁶ *Incentive Auction R&O*, 29 FCC Rcd at 6626, para. 130, 6635, para. 146. See also *Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Second Order on Reconsideration, 30 FCC Rcd 6746, 6757, para. 22 (2015).

¹⁰⁷ Petition at Attachment B. Specifically, the report indicates that RF emission mask characteristics will remain unchanged for Next Gen TV, that effective radiated power limits for stations may be retained to maintain protections for co-channel and adjacent channel interference, and that its modulation characteristics are inherently noise-like. *Id.* at 15.

¹⁰⁸ *Id.* at 15.

¹⁰⁹ OET Bulletin No. 69, "Longley-Rice Methodology for Evaluating TV Coverage and Interference" (Feb. 6, 2004), http://transition.fcc.gov/Bureaus/Engineering_Technology/Documents/bulletins/oet69/oet69.pdf.

¹¹⁰ 47 CFR §§ 73.622 ("Digital television table of allotments"), 73.623 ("DTV applications and changes to DTV allotments"), 74.703 ("Interference." in Subpart G of the Commission's rules: Low Power TV, TV Translator, and TV Booster Stations).

46. The DTV transmission standard has fixed transmission and error correction parameters and a single associated minimum signal strength threshold (or SNR threshold) for service.¹¹¹ The minimum SNR threshold is used as a basis for determining where a DTV broadcast television station's signal can be received. Whether a DTV broadcast television station is considered to have service and receive protection from interference is determined in part by this threshold. The minimum expected signal level for an ATSC 3.0 signal is much more dynamic. The ATSC 3.0 standard enables broadcasters to choose from multiple modulation and error correction parameters, which have the effect of allowing them to adjust their data rates and corresponding minimum SNR thresholds.¹¹² Further, ATSC 3.0 enables broadcasters to transmit multiple streams with different parameters simultaneously. This means that, as a practical matter, the actual area where the signal of a television station broadcasting an ATSC 3.0 signal can be received may not necessarily match up to the same area defined by the single minimum SNR threshold of DTV. The signal-to-noise-ratio threshold for the ATSC 3.0 transmission standard will be variable and station-specific, enabling tradeoffs depending on each station's offerings and quality of service goals. In consideration of the dynamic nature of ATSC 3.0 transmission standard, our proposals seek to maintain the status quo with regard to interference protection and provide certainty with regard to calculating the coverage areas of ATSC 3.0 stations.

47. *Preservation of Service.* Because ATSC 3.0 signals contain multiple video streams each requiring a SNR threshold, we propose to require Next Gen TV broadcasters to provide at least one free stream comparable to a DTV signal to ensure viewers within the "DTV-equivalent" service area continue to receive programming service at the current DTV protection levels. The ATSC 3.0 transmission standard may enable Next Gen TV broadcasters to provide a programming service of a quality similar to DTV service at an SNR threshold lower than the level specified in OET Bulletin No. 69 for DTV service. We seek comment on how to objectively determine if a Next Gen TV programming stream is similar in quality to DTV. Thus a station should provide at least one ATSC 3.0 video stream that requires a SNR threshold equal or less than that needed for coverage at a level specified in OET Bulletin No. 69 for DTV service, where a lower SNR threshold indicates a possibly more robust transmission. In other words, a station providing a mobile video stream requiring a minimum SNR less than specified in OET Bulletin No. 69 would satisfy this requirement. We envision this to be a benefit to broadcasters who elect to offer mobile streams while avoiding potential redundancies in their overall data stream, by not penalizing those stations wishing to deploy mobile service without requiring provision of two identical program streams for both mobile and household reception in the same areas. We seek comment on this proposal and how to define which types of Next Gen TV signals could be considered comparable to DTV signals. Requiring one comparable free video stream will afford broadcasters the flexibility to devote remaining resources to enhanced services such as UHD without affecting their underlying coverage calculations, as requested by the Petitioners, while ensuring that all viewers predicted to receive Next Gen TV signals will have at least one free video stream available to them. We seek comment on what rules changes, if any, would be necessary to implement this proposal.

48. *Next Gen TV Service Area.* Considering the approach to broadly treat DTV and Next Gen TV interference equally, the Commission's convention would be first to define the area subject to calculation, which is the noise-limited contour of the station. Within this contour, the station's service area is determined considering terrain, existing interference, and population distribution above a minimum field strength threshold that is derived from the planning factors given in OET Bulletin No. 69.¹¹³ We propose to define a "DTV-equivalent" service area for a station transmitting in ATSC 3.0 using the methodology

¹¹¹ See A/53, Part 2:2007, "ATSC Digital Television Standard – Part 2: RF/Transmission System Characteristics" at 8-41 (2007), http://atsc.org/wp-content/uploads/2015/03/a_53-Part-1-6-2007.pdf.

¹¹² See A/322:2016 "Physical Layer Protocol" at 31-68 (2016), <http://atsc.org/wp-content/uploads/2016/10/A322-2016-Physical-Layer-Protocol.pdf>.

¹¹³ See 47 CFR § 73.622(e).

and planning factors defined for ATSC 1.0 in OET Bulletin No. 69. This means that for a UHF Next Gen TV station, the “DTV-equivalent” service area would be defined at 41 dB μ V/m plus a dipole adjustment factor.¹¹⁴ We seek comment on the use of a single service threshold to define this “DTV-equivalent” service area. Should the definition of a “DTV-equivalent” service area specify both a minimum field strength and data rate or is the specification of a minimum field strength sufficient to ensure an acceptable data rate?

49. To the extent that commenters propose alternative definitions of service area for stations transmitting in ATSC 3.0 signals, we specifically solicit technical justification of why the definition should differ from that of the existing ATSC 1.0 service and OET Bulletin No. 69. Manhattan Digital notes the lack of real world testing of coverage comparisons between ATSC 1.0 and ATSC 3.0 and questions whether the Commission would grant sufficient power increases to restore lost coverage.¹¹⁵ GatesAir and other equipment manufacturers¹¹⁶ submitted ATSC 3.0 field test results that showed equivalent coverage area thresholds as ATSC 1.0 when an ATSC 3.0 receiver was stationary and using comparable reception equipment.

50. Additionally, the service threshold set by OET Bulletin No. 69 is based on several planning factors that may not be applicable to newer Next Gen TV receivers and deployment characteristics. We seek comment on whether OET Bulletin No. 69 planning factors should be updated or supplemented as they pertain to Next Gen TV to reflect current broadcast reception equipment and conditions, particularly given the Petitioners’ stated additional use cases of mobile and indoor reception. Generally, we seek comment on appropriate values for OET Bulletin No. 69 planning factors for Next Gen TV.

51. *Interference Protection.* We propose to define a protection threshold for Next Gen TV that would provide an equivalent level of protection as a DTV signal. Under this approach, an ATSC 3.0 signal would be protected as defined in OET Bulletin No. 69.¹¹⁷ As a practical matter, co-channel interference for DTV is presently a nonlinear function designed to approximate the performance of test receivers when the ATSC 1.0 standard was under development. We seek comment on whether this same nonlinearity would apply to Next Gen TV receivers in the presence of co-channel interference. Additionally, we acknowledge that Next Gen TV may have multiple video streams, some of which may not be sufficiently protected from interference at a single threshold which was designed specifically to protect DTV signals. Next Gen TV broadcasters that choose to offer higher capacity, i.e. less robust, programming within their “DTV-equivalent” coverage areas may not be protected from interference at this threshold. Next Gen TV broadcasters may also choose to offer lower capacity, i.e. more robust, programming that permits signal to noise ratio thresholds below the DTV threshold. This could effectively expand their consumer base beyond the current “DTV-equivalent” service area or provide coverage to areas that were previously unserved due to terrain-limited propagation conditions within the contour. Should these areas be given interference protection? We seek comment on this approach and alternative threshold protection approaches that could be better suited to ATSC 3.0.

¹¹⁴ Converted to field strength from an assumed to 15 dB SNR above -84 dBm receive signal level. See Table 3 of OET-69.

¹¹⁵ See Manhattan Digital Comments at 3

¹¹⁶ See Letter from John M. Burgett, Counsel to LG Electronics, Zenith Electronics, and GatesAir, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 16-142, at Attachment (filed Nov. 23, 2016).

¹¹⁷ See also 47 CFR § 73.616(e)(1): ... The threshold levels at which interference is considered to occur are: (i) For co-channel stations, the D/U ratio is + 15 dB. This value is only valid at locations where the signal-to-noise ratio is 28 dB or greater. At the edge of the noise-limited service area, where the signal-to-noise (S/N) ratio is 16 dB, this value is + 23 dB. At locations where the S/N ratio is greater than 16 dB but less than 28 dB, D/U values are computed from the following formula: $D/U = 15 + 10\log_{10}[1.0/(1.0-10^{-x/10})]$ Where $x = S/N - 15.19$ (minimum signal to noise ratio) (ii) For interference from a lower first-adjacent channel, the D/U ratio is -28 dB. (iii) For interference from an upper first-adjacent channel, the D/U ratio is -26 dB.

52. Should ATSC 3.0 signals only be protected in areas where their signal strength reaches a single “DTV-equivalent” minimum level or should protections be provided for such signals within their “DTV-equivalent” service contour that fall below the single service threshold but offer a more robust service? Should interference protections be provided for Next Gen TV signals within the “DTV-equivalent” service contour which require alternative adjacent channel D/U ratios for interference protection? Have there been advancements in receiver performance that would warrant the Commission to consider alternative the adjacent channel D/U ratios for ATSC 3.0 receivers? Noting the ATSC A/73 standard for DTV receivers, should the Commission adopt a 33 dB, or some higher or lower threshold for adjacent channel interference, or is the existing 26 to 28 dB threshold for DTV (depending on whether upper- or lower-adjacent) prescribed in our rules more appropriate? If interference protection is to be afforded to Next Gen TV profiles other than the “DTV-equivalent” service, what should those interference protection levels be?

3. Interference Protection Affecting Other Services

53. The last interference issues that we must consider concern those related to interference between ATSC 3.0 transmissions and other services, such as non-broadcast services, that operate within¹¹⁸ or adjacent to¹¹⁹ the TV band. We seek comment on whether and how we should address the impact ATSC 3.0 signals could have on these other services and how these services could impact ATSC 3.0 signals.

54. *Other Services that Operate in the TV Band.* We seek comment on whether, in authorizing the ATSC 3.0 transmission standard, there would be any interference-related issues that arise with respect to services and operations in the TV Band other than full-power, Class A, LPTV and TV translator television stations. If so, what services are impacted and how should the Commission address such interference? To what extent would authorization of the ATSC 3.0 transmission standard raise interference concerns regarding Part 22 or Part 90 services? Would ATSC 3.0 transmissions cause any additional interference to these services, or alternatively should ATSC 3.0 transmissions receive any protections in addition to those afforded today to DTV? Under our existing rules, low-power auxiliary station (LPAS) devices and unlicensed wireless microphones must protect broadcasting operations (i.e., those that transmit using ATSC 1.0), and are by rule limited to operations at locations at least 4 kilometers outside the protected contours of co-channel TV stations.¹²⁰ Licensed wireless microphone operations are also permitted closer to TV stations, including inside the TV contours, if certain specified conditions are met.¹²¹ In addition, white-space devices are required to protect DTV operations by operating outside of DTV contours as specified in the rules.¹²² Are any clarifications or modifications to these rules required if we authorize the ATSC 3.0 transmission standard?

¹¹⁸ The services that operate in the repacked TV bands include Public and Private Mobile Services, BAS, licensed low power auxiliary stations (LPAS) and unlicensed wireless microphones, and unlicensed TV white space devices. See 47 CFR § 2.106.

¹¹⁹ Comments focused on primary wireless operations in the 600 MHz band. CTIA Reply at 5-6. Other services that could be affected are the primary Radio Astronomy Service (RAS) and Wireless Medical Telemetry Services (WMTS) that operate on Channel 37. See 47 CFR § 2.106.

¹²⁰ 47 CFR §§ 74.802(b)(1), 15.236(e)(1).

¹²¹ 47 CFR §§ 74.851, 74.861(b), (e) (providing technical requirements for equipment that can operate in the television band and use of that equipment).

¹²² Public Knowledge and other commenters assert that the conversion to ATSC 3.0 could accelerate the deployment of white-space devices in urban markets, and provide synergies that could benefit both broadcasters and the unlicensed ecosystem. At the same time, these commenters request that the Commission reject any efforts by broadcasters to foreclose unlicensed use in the spectrum commons or demand increased restrictions on white space devices “to purportedly protect their non-free [over-the-air] services.” Public Knowledge Comments at 18-19. The Petitioners assert that the transition to ATSC 3.0 would be accomplished without the need for additional spectrum,

55. *Other Services that Operate in the Adjacent Bands – the 600 MHz Band and Channel 37.* CTIA expressed concern that the Petition’s discussion of the ATSC 3.0 transmission standard contained no consideration of the potential interference impact that this new technology could have on wireless operations in the 600 MHz band. CTIA states that the development and enforcement of carefully drawn technical rules is necessary to prevent interference to 600 MHz band operations, and that the inter-service interference (ISIX) rules adopted by the Commission, which were based entirely on the technical characteristics of DTV signals, were developed to minimize interference between TV broadcasting and 600 MHz band operations.¹²³ The Petitioners respond that it is not possible to test for this interference because the wireless industry has not revealed “what technology wireless carriers will actually deploy in the 600 MHz band,” and argue that there is “no technical reason to believe that ATSC 3.0 creates a higher risk of potential inter-service interference” than ATSC 1.0.¹²⁴

56. The ISIX rules referenced by CTIA were developed for the broadcast incentive auction in the event that some UHF broadcasters would remain in the re-purposed 600 MHz Band creating impairments for the new wireless licensees. At this point in the broadcast incentive auction, there are no impairments to 600 MHz Band wireless licenses that are projected to exist after the post-auction transition period. Therefore, we tentatively conclude there is no need for rules to consider potential interference between Next Gen TV transmissions and the 600 MHz Band service. We seek comment on this tentative conclusion. Alternatively, are more studies needed to fully address any potential interference concerns? If we require broadcasters to “provide interested parties with a clear understanding of how the change to ATSC 3.0 will impact the interference environment in the 600 MHz band” as CTIA requests,¹²⁵ what information would be necessary and sufficient to address any potential concerns?

57. We also seek comment on whether there are any potential interference concerns that adoption of ATSC 3.0 transmission standard may raise with respect to either RAS or WMTS operations in Channel 37.¹²⁶ Finally, we seek comment on whether any of these issues related to interference to services that operate in adjacent bands would require us to clarify how interference issues between ATSC 3.0 transmissions and these other services would be addressed.

4. Station Interference Protection Population Inputs

58. We propose to update the Commission’s rules regarding acceptable levels of interference resulting from a broadcaster’s application for new or modified facilities. Specifically, we propose that, for purposes of evaluating such applications, the Media Bureau should use the latest official U.S. Census statistics, as these population statistics become available and when the Commission is able to incorporate them into the Commission’s licensing processing systems. The Commission’s rules currently require that in evaluating a broadcaster’s application for new or modified facilities, the degree of permissible interference to populations served is to be predicted based on the 2000 census population data.¹²⁷ For purposes of the incentive auction and repacking process, however, the Commission established updated

and thus there should be “little or no impact on” white space device users; the Petitioners also emphasize that “unlicensed users have no right to protection from interference caused by licensed users, and no expectation of priority over licensed operations.” Petitioners’ Reply at 17.

¹²³ CTIA Reply at 5-6.

¹²⁴ Letter from Rick Kaplan, General Counsel and Executive Vice President, Legal and Regulatory Affairs, NAB, to Marlene H. Dortch, Secretary, FCC, at 2 (filed Aug. 4, 2016).

¹²⁵ CTIA Reply at 6.

¹²⁶ We did not receive any comments pertaining to potential interference with respect to RAS or WMTS in response to the Public Notice seeking comment on the Petition.

¹²⁷ 47 CFR § 73.616(e)(1) (requiring use of 2000 Census population data in processing applications).

inputs for purposes of evaluating interference, including use of the 2010 census population data.¹²⁸ We now propose to further update our rules in a manner that is consistent with this approach by permitting the Media Bureau to use the most recent U.S. Census statistics. We propose that the Media Bureau will announce when updated census statistics have been incorporated into our licensing systems and the date upon which such updated inputs will be applied at least 60 days before they are used for application processing purposes.¹²⁹ We further propose that the Commission use 2010 census population data after the repacking process for all application compliance evaluations until the Media Bureau announces the date that it will begin using census population data for a different year. Thus, even after the repacking process is complete, any broadcast television service or interference calculations would be based on 2010 U.S. Census statistics, until after 2020, when the next U.S. Census statistics become available and the Media Bureau announces the date of application of such data. We believe that this process and the use of the most current population data incorporated into the Commission's systems will provide more accurate predictions of populations served and benefit the public interest. We seek comment on this proposal.

E. Single Frequency Networks (SFN) and Distributed Transmission Systems (DTS)

59. We propose to authorize broadcast television stations to operate ATSC 3.0 Single Frequency Networks (SFN) under our existing Distributed Transmission Systems (DTS) rules with one amendment noted below.¹³⁰ While a traditional broadcaster has a single transmission site, and any fill-in service is provided using a separately licensed secondary transmission site that likely uses a different RF channel, a broadcaster using DTS provides television service to its area by two or more transmission sites using an identical signal on the same RF channel, synchronized to manage self-interference.¹³¹ The rules established by the *DTS Report and Order* describe the authorized service area, maximum service area, station reference point, coverage determination, protection from interference and application requirements for DTS stations.¹³²

60. Multiple commenters claim that broadcasters that transition to ATSC 3.0 will have the ability to efficiently form a SFN, which for the purposes of broadcast television is a term that is synonymous with DTS.¹³³ Like the DTS network described above, an ATSC 3.0 SFN would provide television service by using two or more transmission sites, using an identical signal on the same RF channel, synchronized to manage self-interference.¹³⁴ Accordingly, we tentatively conclude that the rules established to

¹²⁸ *Incentive Auction R&O*, 29 FCC Rcd at 6636-7, paras. 148-149 (adopting use of 2010 Census population data for the repacking process).

¹²⁹ Specifically, we propose that the first sentence of 47 CFR § 73.616(e)(1) be amended to state: "For evaluating compliance with the requirements of this paragraph, interference to populations served is to be predicted based on the most recent official decennial U.S. Census population data as identified by the Media Bureau in a Public Notice issued not less than 60 days prior to use of the data for a specific year in application processing, and otherwise according to the procedure set forth in OET Bulletin No. 69"

¹³⁰ 47 CFR § 73.626.

¹³¹ Radio waves require a certain amount of time to travel any given distance. In the case of a DTS network, this means that a location in the service area of the station will most likely receive the signals from the different transmitters at different times, because the transmitters are different distances away from that location. TV receivers are typically designed to handle a certain range of time differences to accommodate signal reflections. If a received DTS time difference falls outside that range, to the receiver the signals appear to be co-channel interference. Because the timing difference is predictable based on distance, precise synchronization of the signals from the different transmitters allows a station to offset the broadcast times with high precision, so that the areas where large timing differences occur can be redirected to low-impact regions.

¹³² See *DTS Report and Order*, 23 FCC Rcd 16731.

¹³³ ATSC Comments at 4; ATBA Comments at 5; One Media Reply at 8.

¹³⁴ See "SFN - Single Frequency Network," <http://www.telecomabc.com/sfn.html> (last visited Jan. 17, 2017).

authorize a DTS station generally are adequate to authorize an ATSC 3.0 SFN station, and as such an ATSC 3.0 SFN should be considered a DTS station for the purposes of our rules. We seek comment on this tentative conclusion.

61. We also tentatively conclude that it is not necessary to adopt a specific synchronization standard in order to authorize an ATSC 3.0 SFN. In the *DTS Report and Order*, the Commission found that it was not necessary for a station to use a specific synchronization system as long as (1) the synchronization used by a station was effective in minimizing interference within the system, (2) otherwise provided service to the population within the station's service area consistent with FCC rules, and (3) complied with the ATSC standard adopted by the FCC.¹³⁵ It further noted that this approach avoided implication of any specific intellectual property held by companies participating in the proceeding.¹³⁶ Thus, although ATSC had developed the A/110 "ATSC Standard for Transmitter Synchronization," the Commission determined that it was not necessary to adopt this as the synchronization standard for DTS, and as a result, DTS stations have flexibility with regard to transmitter synchronization. In this proceeding, one commenter, LG Electronics, notes that the standard that would enable an ATSC 3.0 SFN is ATSC A/322:2016 "Physical Layer Protocol." LG claims that A/322 should be incorporated by reference into the rules along with A/321 to ensure that SFN is authorized.¹³⁷ We seek comment above on whether A/322 should be incorporated into our rules.¹³⁸ Consistent with our finding in the DTS proceeding, we tentatively conclude that as long as the synchronization used to implement an SFN/DTS minimizes interference within the network and provides adequate service, then there is no need to require a specific synchronization standard. We seek comment on this tentative conclusion.

62. We propose to amend our existing DTS rules to specify that, with regard to ATSC 3.0 transmissions, not only must each transmitter comply with the ATSC 3.0 standard ultimately adopted by the FCC, but all transmitters under a single license must follow the same standard.¹³⁹ We tentatively find that a DTS implementation that mixes ATSC 3.0 and ATSC 1.0 would not meet the requirement to be "synchronized" as specified in Section 73.626(a) of our rules, as it would not minimize interference within the system. We seek comment on this tentative conclusion.

F. ATSC 3.0 Transmissions as "Television Broadcasting"

1. Definition of Television Broadcasting

63. We propose that television stations transmitting both an ATSC 1.0 and an ATSC 3.0 signal are "television stations" engaged in "broadcasting" as those terms are defined in the Communications Act.¹⁴⁰ Although we do not propose to authorize broadcasters to transmit solely in ATSC 3.0 at this time, we also tentatively conclude that stations transmitting only an ATSC 3.0 signal would be "television stations" engaged in "broadcasting" under the Act.

64. The Petitioners request that the Commission "specify that Next Generation TV transmission is 'television broadcasting' in parity with the current DTV standard."¹⁴¹ The Act imposes certain

¹³⁵ See *DTS Report and Order*, 23 FCC Rcd at 16759, para 50.

¹³⁶ *Id.* at 16760, para. 51.

¹³⁷ LG Reply at 3.

¹³⁸ See Section III(A), Authorization of Voluntary Use of ATSC 3.0 Transmissions Section.

¹³⁹ Specifically, we propose to add a new rule 47 CFR § 73.626(g) that states: "All transmitters operating under a single DTS License must follow the same digital broadcast television transmission standard."

¹⁴⁰ The Act defines a "broadcast station" as "a radio station equipped to engage in broadcasting," 47 U.S.C. § 153(6), and defines "broadcasting" as "the dissemination of radio communications intended to be received by the public, directly or by the intermediary of relay stations." 47 U.S.C. § 153(7).

¹⁴¹ Petition at iv.

obligations and restrictions on stations engaged in “broadcasting,” including the restriction on foreign ownership¹⁴² and the requirements that they provide “reasonable access” to candidates for federal elective office and afford “equal opportunities” to candidates for any public office.¹⁴³ Television broadcasters must also make certain disclosures in connection with advertisements that discuss a “political matter of national importance”¹⁴⁴ and must disclose the identity of program sponsors.¹⁴⁵ In addition, among other requirements, television broadcasters must air educational programming for children,¹⁴⁶ limit the amount of commercial material they include in programming directed to children,¹⁴⁷ restrict the airing of indecent programming,¹⁴⁸ and comply with provisions relating to the rating of video programming.¹⁴⁹ The Commission has determined that the definition of “broadcasting” in the Act applies to services intended to be received by an indiscriminate public and has identified three indicia of a lack of such intent: (1) the service is not receivable on conventional television sets and requires a licensee or programmer-provided special antennae and/or signal converter so the signal can be received in the home; (2) the programming is encrypted; and (3) the provider and the viewer are engaged in a private contractual relationship.¹⁵⁰

65. Based on the description of ATSC 3.0 transmissions in the Petition and in the record, and because we propose to require ATSC 3.0 stations to provide a free, over-the-air service,¹⁵¹ it appears that ATSC 3.0 transmissions would be intended to be received by all members of the public and therefore would meet the definition of “broadcasting.” Accordingly, as noted above, we tentatively conclude that Next Gen TV stations are “television stations” engaged in “broadcasting” as those terms are defined by the Act.¹⁵² No commenters in response to the Petition take a different position. We seek comment on this tentative conclusion and any alternative views. Is there any basis for determining that ATSC 3.0 transmissions are not “broadcasting”? What would the implications be of such a determination in terms of regulatory obligations and Commission oversight?

2. Public Interest Obligations

66. Assuming we adopt our tentative conclusion that Next Gen TV stations are engaged in “broadcasting” under the Act, they—like all broadcast television licensees—would be public trustees with a responsibility to serve the “public interest, convenience, and necessity.”¹⁵³

¹⁴² 47 U.S.C. § 310.

¹⁴³ *Id.* § 312(a)(7).

¹⁴⁴ *Id.* § 315. These requirements were added by the Bipartisan Campaign Reform Act of 2002, Pub. L. No. 107-155, 116 Stat. 81 (2002), which amended the political file requirements in Section 315 of the Act.

¹⁴⁵ 47 U.S.C. § 317.

¹⁴⁶ *Id.* § 303b.

¹⁴⁷ *Id.* § 303a.

¹⁴⁸ 18 U.S.C. § 1464.

¹⁴⁹ 47 U.S.C. § 303(w).

¹⁵⁰ *See Subscription Video*, Report and Order, 2 FCC Rcd 1001, 1006, para. 41 (1987) (concluding that subscription TV and DBS services are not “broadcasting” within the meaning of the Communications Act), *aff’d*, *National Association for Better Broadcasting v. FCC*, 849 F.2d 665, 669 (D.C. Cir. 1988).

¹⁵¹ *See supra* para. 12.

¹⁵² *See supra* para. 63.

¹⁵³ 47 U.S.C. § 307(c). As noted above, among the restrictions and obligations imposed on television broadcasters by the Act are foreign ownership restrictions and requirements regarding political programming, sponsorship identification, and children’s programming. *See supra* para. 81.

67. We propose to apply all of our broadcast rules to Next Gen TV stations including, but not limited to, our rules regarding foreign ownership, political broadcasting, children's programming, equal employment opportunities, public inspection file, main studio, indecency, sponsorship identification, contest rules, CALM Act, the Emergency Alert System (EAS), closed captioning, and video description.¹⁵⁴ Are there any public interest or programming rules that should not apply? Are there any changes to these rules that should be made to accommodate any ATSC 3.0-based services? While the Petition does not address broadcaster public interest obligations in detail, it states that "[n]o changes are necessary in the Commission's programming-related policies and rules, as those requirements will attach to television licensees regardless of the authorized standard they use to transmit programming to their communities of license."¹⁵⁵ The Petition further states that licensees implementing ATSC 3.0 technology will "remain simply television broadcasters subject to the Commission's existing regulatory structure."¹⁵⁶ We request comment generally on this view.

68. Although we decline to initiate a general reexamination of broadcaster public interest obligations at this time,¹⁵⁷ we seek comment on specific consumer issues related to the enhanced capabilities that may be available through the use of ATSC 3.0 transmissions. The Petition claims that the advent of ATSC 3.0 (including the entire suite of ATSC 3.0-related standards and IP-based services that operate on top of the transmission standard¹⁵⁸) will enable improvements to certain services, including EAS, closed captioning, and video description, but 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. With respect to EAS, Petitioners argue that ATSC 3.0 will offer significantly enhanced emergency alert capabilities, including the abilities to alert consumers of an emergency even when the receiver is powered off, tailor information for specific geographic areas, and provide enhanced datacasting to serve law enforcement, first responder, and emergency management organizations more efficiently.¹⁵⁹ With respect to closed captioning, Petitioners state that the ATSC 3.0 transmission standard offers a different format for caption data from that used by DTV and that the Commission's rules already anticipate this technology and provide that data in this format is compliant.¹⁶⁰ Finally, Petitioners state that the ATSC 3.0 standard has functionality for video description and additional

¹⁵⁴ See, e.g., 47 CFR §§ 73.1940, 73.1941, and 73.1942 (political broadcasting); 73.670, 73.671, and 73.673 (children's programming); 73.2080 (EEO); 73.1943, 73.3526, 73.3527 (public and political file); 73.1125 (main studio); 73.3999 (indecency); 73.1212 (sponsorship id); 73.1216 (contest rules); 73.682(e) and 73.8000 (loud commercials); and 73.1250 (EAS). See also 47 U.S.C. § 310 and 47 CFR §§ 1.5000-5004 (foreign ownership) and 47 CFR Part 79 (closed captioning and video description).

¹⁵⁵ Petition at 13.

¹⁵⁶ *Id.*

¹⁵⁷ See Public Knowledge Comments at 2-3, 9-11 (advocating that the Commission initiate a broad reexamination of broadcaster public interest requirements). Broadcasters and other commenters oppose this request. See, e.g., Petitioners' Reply at 14-17, Pearl Reply at 6-7, Sinclair Reply at 2, One Media Reply at 8.

¹⁵⁸ As noted in the Petition and discussed above, adopting the ATSC 3.0 transmissions standard enables broadcasters to deliver various new IP-based services developed under other ATSC standards currently under development. See Petition at 2-3; *supra* para. 3.

¹⁵⁹ See Petition at 5, 20. See also Public Knowledge Comments at 13-14. The Commission is considering a number of advanced alerting features in its Wireless Emergency Alerts (WEA) and Emergency Alert System (EAS) proceedings. See generally PS Docket Nos. 15-91 and 15-94. ATSC stakeholders have filed comments in the Commission's EAS proceedings discussing various improvements that ATSC 3.0 can offer to advance America's emergency alerting capabilities. See AWARN Alliance Comments, PS Docket No. 15-94, at 4 (filed June 8, 2016) ("AWARN will leverage the native features of ATSC 3.0 . . . to achieve its major improvements in emergency communications.").

¹⁶⁰ See Petition at 20.

language support, and can implement these requirements in compliance with the FCC's rules.¹⁶¹ We invite comment generally on these asserted benefits and whether we should consider any rule changes in light of them.¹⁶²

69. With respect to broadcasters' political programming obligations, if certain advanced features made possible by the ATSC 3.0 transmission standard (such as user data that could permit targeted advertising) are offered to one candidate, must they be offered to others under the equal opportunity requirements? Should broadcasters be required to offer certain features made possible by the new standard to candidates? We seek input on these public interest issues and any others that may result from enhancements or other changes to television broadcasting that may result from the use of Next Gen TV transmissions.

70. Finally, we invite comment on which features of ATSC 3.0-based services will be provided over-the-air to consumers for free and what additional services or features will require a fee. What features of ATSC 3.0 service will be available only to those with an Internet connection? Which such services or features will be "ancillary services" within the meaning of our rules?¹⁶³ If the majority of an ATSC 3.0 station's spectrum/bandwidth is devoted to paid services, are those services "ancillary" under our rules? Are there any services that Next Gen TV broadcasters might offer that would not be ancillary or supplementary services that serve the public interest?¹⁶⁴ What is the potential regulatory significance of an ATSC 3.0-based service that is provided for free versus one that is not?

G. Transition and Consumer Issues

1. Next Gen TV Tuner Mandate

71. Television receivers manufactured today are not capable of receiving ATSC 3.0 signals. We seek comment on whether we should require that new television receivers manufactured after a certain date include the capability to receive ATSC 3.0 signals and if so, when such a mandate should take effect. Alternatively, we seek comment on whether, consistent with Petitioners' recommendation, the market will address this absent regulation. It may be possible to upgrade most, if not all, receivers currently being manufactured to allow them to receive ATSC 3.0 signals, but such upgrades would require over-the-air viewers to purchase additional equipment, such as a dongle or other equipment (e.g., a set-top box or gateway device) that can be attached to the receiver's HDMI port, assuming that receiver has an HDMI port. A Next Gen TV tuner requirement would protect consumers by ensuring that they will be able to access ATSC 3.0 service over the air on new television receivers purchased after the specified date without having to invest in additional equipment. The Petitioners assert, however, that the Commission should not mandate Next Gen TV tuners in television receivers at this time, but should instead allow the marketplace to dictate the availability of television receivers with a Next Gen TV tuner.¹⁶⁵ According to the Petitioners, "a market-driven approach will ensure that both broadcasters and receiver manufacturers adopt the new transmission standard in response to consumer demand."¹⁶⁶ Several other commenters

¹⁶¹ *Id.*

¹⁶² In Section III(A), Authorization of Voluntary Use of ATSC 3.0 Transmissions, we seek comment on which components of the ATSC 3.0 standard we should incorporate into our rules in order to ensure compliance with the Commission's rules, including the public interest rules.

¹⁶³ See 47 CFR § 73.624(c) ("DTV broadcast stations are permitted to offer services of any nature, consistent with the public interest, convenience, and necessity, on an ancillary or supplementary basis.").

¹⁶⁴ See 47 U.S.C. § 336(a)(2) ("The Commission . . . shall adopt regulations that allow the holders of such [DTV] licenses to offer such ancillary or supplementary services on designated frequencies as may be consistent with the public interest, convenience, and necessity.").

¹⁶⁵ Petition at 13.

¹⁶⁶ *Id.*

agree that a Next Gen TV tuner mandate is not necessary at this time.¹⁶⁷ We tentatively agree with that position but seek comment on whether such a market-based approach will ensure that television receivers capable of receiving ATSC 3.0 signals are available to consumers.¹⁶⁸

72. Section 15.117(b), the rule implementing the Commission's authority under the 1962 All Channel Receiver Act (ACRA), states that "TV broadcast receivers shall be capable of adequately receiving all channels allocated by the Commission to the television broadcast service."¹⁶⁹ If we decide not to adopt a Next Gen TV tuner mandate at this time, we propose to revise Section 15.117(b) to make clear that this rule does not apply to ATSC 3.0.

73. An alternative to adopting a Next Gen TV tuner mandate would be to require that all TV receivers sold after a specified date, such as three years after the effective date of the Report and Order in this proceeding, have an HDMI port to permit attachment of an external tuner dongle or other equipment (e.g., a set-top box or gateway device) that can receive signals from an OTA antenna and will allow the receiver to be easily upgraded to view ATSC 3.0 services? Such a requirement could ensure that all TV receivers purchased by consumers after that date will be useful for their life expectancy, which would protect consumers' investments in television receivers. We seek comment on whether such a requirement is appropriate. Does the Commission have the statutory authority to adopt such a requirement and, if so, what is the basis for such authority? What percentage, if any, of TV receivers manufactured today do not have an HDMI port and therefore are not easily upgradeable to receive ATSC 3.0 transmissions? What would be the costs to manufacturers associated with a requirement to ensure that all television receivers are easily upgradeable to receive ATSC 3.0 transmissions, and how quickly could such a requirement be implemented?

2. On-Air Notice to Consumers About Transition to ATSC 3.0

74. We seek comment on whether broadcasters should be required to provide on-air notifications to educate consumers about their transition to Next Gen TV service. We believe that it could be useful for broadcasters to inform consumers that the stations they view will be changing channels, to encourage consumers to rescan their receivers for new channel assignments, and to educate them on steps they should take to resolve any potential reception issues. The Commission imposed viewer notification requirements during the DTV transition as well as in connection with the incentive auction.¹⁷⁰ Should they be imposed in connection with the use of ATSC 3.0 transmissions? Does the Commission have legal authority to require such on-air notices in this context?

75. If we were to require broadcasters to notify consumers during the transition to ATSC 3.0, we invite comment on the requirements we should impose regarding these notifications. How far in advance

¹⁶⁷ AGC Comments at 8; GatesAir Comments at 5; Graham Media Comments at 2; ATSC Comments at 5; NAB Reply at 2; Nexstar Reply at 2.

¹⁶⁸ We note that in 2002, the Commission adopted the DTV tuner mandate, which required that certain new broadcast television receiving equipment include the capability to receive digital TV signals pursuant to a phased-in implementation schedule. *Review of the Commission's Rules and Policies Affecting the Conversion to Digital Television*, Second Report and Order and Second Memorandum Opinion and Order, 17 FCC Rcd 15978, 15979, para. 1 (2002). The Commission determined that the public would be reluctant to buy DTV receivers until there were DTV stations offering attractive DTV programs and that broadcasters would lack incentives to provide attractive DTV programming in the absence of an audience that would attract advertisers. *Id.* at 15990, para. 27.

¹⁶⁹ 47 CFR § 15.117(b). The term "TV broadcast receivers" includes "devices, such as TV interface devices and set-top devices that are intended to provide audio-video signals to a video monitor, that incorporate the tuner portion of a TV broadcast receiver and that are equipped with an antenna or antenna terminals that can be used for off-the-air reception of TV broadcast signals, as authorized under part 73 of this chapter." *Id.* § 15.117(a).

¹⁷⁰ See *DTV Consumer Education Initiative*, Report and Order, 23 FCC Rcd 4134 (2008); *Incentive Auction Report and Order*, 29 FCC Rcd at 6807-6810, paras. 586-591.

should we require broadcasters to notify viewers before broadcasters shift their ATSC 1.0 signal to another station's broadcast channel? What form should this notice take – PSAs, crawls, or a combination of both? What information should stations be required to include in the notification?

76. We also seek comment on whether Commission outreach is necessary to those communities affected by the transition to ATSC 3.0. Should the FCC's existing call center provide consumer assistance over the phone on matters such as "rescanning" or to help resolve other reception issues? What guidance should the Commission provide through its website (www.fcc.gov)? Should the Commission staff prepare maps that would be available online to inform consumers about what station signals are affected by the transition to Next Gen TV signals, as it did for the digital transition? We seek comment also on other potential types of Commission outreach and the appropriate timing of such efforts.

3. Interplay with Post-Incentive Auction Transition / Repack

77. The Commission has stated that, following the completion of the incentive auction, it will establish a 39-month transition period ("post-auction transition period") during which time all full power and Class A television stations that are changing frequencies as a result of the auction must cease operations in those portions of the current broadcast UHF television bands that are being repurposed to wireless use.¹⁷¹ The Media Bureau will establish a set of construction deadlines for stations that will relocate as a result of the auction, some of which will be given 36 months to complete construction and some of which will have shorter deadlines.¹⁷² The Commission previously determined that all stations must cease operating on their pre-auction channels at the end of the 39-month post-auction transition period regardless of whether they have completed construction of the facilities for their post-auction channel.¹⁷³ We seek comment on the extent to which the repacking of stations after the incentive auction presents an opportunity for repacked stations that want to upgrade to ATSC 3.0. What steps should the Commission take to facilitate ATSC 3.0 deployment consistent with the repack and ensure consumers retain the television service they expect while more quickly enjoying the benefits of Next-Generation Television?

78. We also invite comment on how to ensure that the deployment of ATSC 3.0 does not negatively affect the post-incentive auction transition process.¹⁷⁴ What steps should the broadcast industry take to address this issue?

¹⁷¹ *Incentive Auction Report and Order*, 29 FCC Rcd at 6782-6783, para. 525. We note that the 39-month transition period is the subject of petitions for reconsideration that remain pending before the Commission in GN Docket No. 12-268. See *Affiliates Associations, Petition for Reconsideration*, GN Docket No. 12-268, at 8 and 10 (filed Sept. 15, 2014); *Advance Television Broadcasting Alliance, Petition for Reconsideration*, GN Docket No. 12-268, at 7 (filed Sept. 15, 2014); *Gannett Co., Inc., Graham Media Group, and ICA Broadcasting Petition for Reconsideration and Clarification*, GN Docket No. 12-268, at 5 (filed Sept. 15, 2014).

¹⁷² *Incentive Auction Report and Order*, 29 FCC Rcd at 6796, para. 560.

¹⁷³ *Id.* *Incentive Auction Task Force and Media Bureau Adopt Post-Incentive Auction Transition Scheduling Plan*, Public Notice, DA 17-107 (rel. January 27, 2017) (*Transition Scheduling Adoption Public Notice*) (stations will be assigned to one of 10 transition phases with sequential testing periods and phase completion dates using two computer-based tools that group stations in a manner that respects interference relationships and accounts for the time required for stations to complete their transition-related tasks).

¹⁷⁴ We note that the Media Bureau has determined that any request to alter repacking construction deadlines or phase completion dates will be viewed favorably only if they have little or no impact on other stations' transition schedule, and that such requests otherwise will be viewed unfavorably. See *Incentive Auction Task Force and Media Bureau Announces Procedures for the Post-Incentive Auction Broadcast Transition*, Public Notice, GN Docket No. 12-268 and MB Docket No. 16-306, DA 17-106, ¶ 73 (rel. Jan. 27, 2017) (*Broadcast Transition Procedures Public Notice*); see also *Transition Scheduling Adoption Public Notice*.

79. CTIA asks that we clarify that ATSC 3.0 equipment is not eligible for reimbursement from the TV Broadcaster Relocation Fund (Reimbursement Fund).¹⁷⁵ All requests for reimbursement from the Reimbursement Fund, including those for ATSC 3.0 capable equipment, will be evaluated consistent with the standards set forth in the *Incentive Auction Report and Order*.¹⁷⁶ In that order, the Commission recognized that replacement equipment eligible for reimbursement from the Reimbursement Fund “necessarily may include improved functionality,”¹⁷⁷ but stated “[w]e do not ... anticipate providing reimbursement for new, optional features in equipment unless the station or MVPD documents that the feature is already present in the equipment that is being replaced. Eligible stations and MVPDs may elect to purchase optional equipment capability or make other upgrades at their own cost, but only the cost of the equipment without optional upgrades is a reimbursable expense.”¹⁷⁸

IV. PROCEDURAL MATTERS

A. Initial Regulatory Flexibility Act Analysis

80. Initial Regulatory Flexibility Act Analysis. As required by the Regulatory Flexibility Act of 1980 (RFA),¹⁷⁹ the Commission has prepared an Initial Regulatory Flexibility Analysis (IRFA). The IRFA is attached as Appendix D. Written public comments are requested on the IRFA. Comments must be identified as responses to the IRFA and must be filed by the deadlines for comments on the first page of this document. The Commission will send a copy of this document, including this IRFA, to the Chief Counsel for Advocacy of the Small Business Administration (SBA).

B. Initial Paperwork Reduction Act of 1995 Analysis

81. Initial Paperwork Reduction Act of 1995 Analysis. This *NPRM* may result in new or revised information collection requirements. If the Commission adopts any new or revised information collection requirements, the Commission will publish a notice in the Federal Register inviting the public to comment on such requirements, as required by the Paperwork Reduction Act of 1995 (PRA).¹⁸⁰ In addition, pursuant to the Small Business Paperwork Relief Act of 2002,¹⁸¹ the Commission will seek specific comment on how it might “further reduce the information collection burden for small business concerns with fewer than 25 employees.”

C. Ex Parte Presentations

82. Ex Parte Rules. The proceeding this Notice initiates shall be treated as a “permit-but-disclose” proceeding in accordance with the Commission’s *ex parte* rules.¹⁸² *Ex parte* presentations are permissible if disclosed in accordance with Commission rules, except during the Sunshine Agenda period when presentations, *ex parte* or otherwise, are generally prohibited. Persons making *ex parte* presentations must file a copy of any written presentation or a memorandum summarizing any oral presentation within two business days after the presentation (unless a different deadline applicable to the

¹⁷⁵ See CTIA Reply at 3-4.

¹⁷⁶ See *Incentive Auction Report and Order*, 29 FCC Rcd at 6812-6833, paras. 598-654.

¹⁷⁷ *Id.* at 6822, para. 624.

¹⁷⁸ *Id.*

¹⁷⁹ See 5 U.S.C. § 603. The RFA, see 5 U.S.C. § 601, *et. seq.*, has been amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), Pub. L. No. 104-121, Title II, 110 Stat. 847 (1996). The SBREFA was enacted as Title II of the Contract with America Advancement Act of 1996 (CWAAA).

¹⁸⁰ The Paperwork Reduction Act of 1995 (PRA), Pub. L. No. 104-13, 109 Stat 163 (1995) (codified in Chapter 35 of title 44 U.S.C.).

¹⁸¹ The Small Business Paperwork Relief Act of 2002 (SBPRA), Pub. L. No. 107-198, 116 Stat. 729 (2002) (codified in Chapter 35 of title 44 U.S.C.); see 44 U.S.C. § 3506(c)(4).

¹⁸² See 47 CFR § 1.1206 (Permit-but-disclose proceedings); see also *id.* §§ 1.1200 *et seq.*

Sunshine period applies). Persons making oral *ex parte* presentations are reminded that memoranda summarizing the presentation must (1) list all persons attending or otherwise participating in the meeting at which the *ex parte* presentation was made, and (2) summarize all data presented and arguments made during the presentation. Memoranda must contain a summary of the substance of the *ex parte* presentation and not merely a listing of the subjects discussed. More than a one or two sentence description of the views and arguments presented is generally required. If the presentation consisted in whole or in part of the presentation of data or arguments already reflected in the presenter's written comments, memoranda or other filings in the proceeding, the presenter may provide citations to such data or arguments in his or her prior comments, memoranda, or other filings (specifying the relevant page and/or paragraph numbers where such data or arguments can be found) in lieu of summarizing them in the memorandum. Documents shown or given to Commission staff during *ex parte* meetings are deemed to be written *ex parte* presentations and must be filed consistent with Section 1.1206(b) of the rules. In proceedings governed by Section 1.49(f) of the rules or for which the Commission has made available a method of electronic filing, written *ex parte* presentations and memoranda summarizing oral *ex parte* presentations, and all attachments thereto, must be filed through the electronic comment filing system available for that proceeding, and must be filed in their native format (e.g., .doc, .xml, .ppt, searchable .pdf). Participants in this proceeding should familiarize themselves with the Commission's *ex parte* rules.

D. Comment Filing Procedures

83. Pursuant to sections 1.415 and 1.419 of the Commission's rules,¹⁸³ interested parties may file comments and reply comments on or before the dates indicated on the first page of this document. Comments may be filed using the Commission's Electronic Comment Filing System (ECFS).¹⁸⁴

- **Electronic Filers:** Comments may be filed electronically using the Internet by accessing the ECFS: <http://apps.fcc.gov/ecfs/>.
- **Paper Filers:** Parties who choose to file by paper must file an original and one copy of each filing. If more than one docket or rulemaking number appears in the caption of this proceeding, filers must submit two additional copies for each additional docket or rulemaking number.

Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail. All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.

- All hand-delivered or messenger-delivered paper filings for the Commission's Secretary must be delivered to FCC Headquarters at 445 12th St., SW, Room TW-A325, Washington, DC 20554. The filing hours are 8:00 a.m. to 7:00 p.m. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes and boxes must be disposed of before entering the building.
- Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9300 East Hampton Drive, Capitol Heights, MD 20743.
- U.S. Postal Service first-class, Express, and Priority mail must be addressed to 445 12th Street, SW, Washington DC 20554.

84. **People with Disabilities:** To request materials in accessible formats for people with disabilities (braille, large print, electronic files, audio format), send an e-mail to fcc504@fcc.gov or call the Consumer & Governmental Affairs Bureau at 202-418-0530 (voice), 202-418-0432 (tty).

85. **Availability of Documents.** Comments and reply comments will be publically available online via ECFS.¹⁸⁵ These documents will also be available for public inspection during regular business

¹⁸³ See *id.* §§ 1.415, 1.419.

¹⁸⁴ See *Electronic Filing of Documents in Rulemaking Proceedings*, Report and Order, 13 FCC Rcd 11322 (1998).

¹⁸⁵ Documents will generally be available electronically in ASCII, Microsoft Word, and/or Adobe Acrobat.

hours in the FCC Reference Information Center, which is located in Room CY-A257 at FCC Headquarters, 445 12th Street, SW, Washington, DC 20554. The Reference Information Center is open to the public Monday through Thursday from 8:00 a.m. to 4:30 p.m. and Friday from 8:00 a.m. to 11:30 a.m.

86. Additional Information. For additional information on this proceeding, contact John Gabrysch, John.Gabrysch@fcc.gov, of the Media Bureau, Engineering Division, at (202) 418-7152, Sean Mirzadegan, Sean.Mirzadegan@fcc.gov, of the Media Bureau, Engineering Division, at (202) 418-7111, Evan Baranoff, Evan.Baranoff@fcc.gov, of the Media Bureau, Policy Division, (202) 418-7142, or Matthew Hussey, Matthew.Hussey@fcc.gov, of the Office of Engineering and Technology, (202) 418-3619.

V. ORDERING CLAUSES

87. **IT IS ORDERED**, pursuant to the authority found in Sections 1, 4, 301, 303, 307, 308, 309, 316, 319, 325(b), 336, 338, 399b, 403, 534, and 535 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 154, 301, 303, 307, 308, 309, 316, 319, 325(b), 336, 338, 399b, 403, 534, and 535, the Notice of Proposed Rulemaking in GN Docket No. 16-142 **IS ADOPTED**.

88. **IT IS FURTHER ORDERED** that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, **SHALL SEND** a copy of this Notice of Proposed Rulemaking, including the Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch
Secretary

APPENDIX A
Proposed Rules

The Federal Communications Commission proposes to amend Parts 15 and 73 of Title 47 of the Code of Federal Regulations (CFR) as set forth below:

PART 15– Radio Frequency Devices

1. The authority citation for Part 15 continues to read as follows:

Authority: 47 U.S.C. 154, 302a, 303, 304, 307, 336, 544a, and 549.

2. Amend 15.117(b) to read as follows:

§ 15.117 TV broadcast receivers.

* * * * *

(b) TV broadcast receivers shall be capable of adequately receiving all channels allocated by the Commission to the television broadcast service that broadcast digital signals broadcast using the ATSC 1.0 standard, but need not be capable of receiving analog signals or signals using the ATSC 3.0 standard.

* * * * *

PART 73– Radio Broadcast Services

1. The authority citation for Part 73 continues to read as follows:

Authority: 47 U.S.C. 47 U.S.C. 154, 303, 334, 336, and 339.

2. Amend the first sentence of §73.616(e)(1) to begin as follows:

§ 73.616 Post-transition DTV station interference protection.

* * * * *

(1) For evaluating compliance with the requirements of this paragraph, interference to populations served is to be predicted based on the most recent official decennial U.S. Census population data as identified by the Media Bureau in a Public Notice issued not less than 60 days prior to use of the data for a specific year in application processing, and otherwise according to the procedure set forth in OET Bulletin No. 69 . . .

3. Amend §73.616 by adding a new paragraph (g) to read as follows:

§ 73.616 Post-transition DTV station interference protection.

* * * * *

(g) The interference protection requirements contained in this section apply to television station operations under ATSC A/321:2016, “System Discovery and Signaling” (March 23, 2016) (incorporated by reference, see §73.8000).

4. Amend § 73.624(b) by adding a new paragraph (3) to read as follows:

§ 73.624 Digital television broadcast stations.

* * * * *

(3) DTV licensees or permittees that transmit a signal as set forth in A/321:2016, “System Discovery and Signaling” (March 23, 2016) shall transmit at least one free video stream on that signal that requires at most the signal threshold of a comparable received DTV signal, and shall simulcast the video programming on that signal on another local broadcast facility using the current DTV standard.

5. Amend §73.626 by adding a new paragraph (g) to read as follows:

§ 73.626 DTV Distributed Transmission Systems.

* * * * *

(g) All transmitters operating under a single DTS license must follow the same digital broadcast television transmission standard.

6. Amend §73.682 by adding new a paragraph (f) to read as follows:

§ 73.682 TV transmission standards.

* * * * *

(f) Alternative digital broadcast television transmission standard authorized.

(1) Next Gen TV service. Effective [DATE], as an alternative to complying with the requirements set forth in paragraph (d) of this section, transmission of digital broadcast television (DTV) signals may comply with the standards for such transmissions set forth in ATSC A/321:2016, “System Discovery and Signaling” (March 23, 2016) (incorporated by reference, see §73.8000).

(2) Continuity of service. The licensee of a DTV station operating pursuant to paragraph (f)(1) shall arrange for another DTV station operating in compliance with paragraph (d) of this section and substantially covering such station’s community of license to simulcast such station’s primary program stream. Agreements for simulcast under this paragraph (g) must be filed with the Commission.

7. Amend §73.8000 by adding a new paragraph (b)(6) to read as follows:

§73.8000 Incorporation by reference.

* * * * *

(b) * * *

(6) A/321:2016, “System Discovery and Signaling” (March 23, 2016), IBR approved for §§ 73.616 and 73.682.

* * * * *

APPENDIX B

Initial Regulatory Flexibility Analysis

1. As required by the Regulatory Flexibility Act of 1980, as amended (RFA),¹ the Federal Communications Commission (Commission) has prepared this present Initial Regulatory Flexibility Analysis (IRFA) concerning the possible significant economic impact on small entities by the policies and rules proposed in the *Notice of Proposed Rulemaking (NPRM)*. Written public comments are requested on this IRFA. Comments must be identified as responses to the IRFA and must be filed by the deadlines for comments provided on the first page of the *NPRM*. The Commission will send a copy of the *NPRM*, including this IRFA, to the Chief Counsel for Advocacy of the Small Business Administration (SBA).² In addition, the *NPRM* and IRFA (or summaries thereof) will be published in the Federal Register.³

A. Need for, and Objectives of, the Proposed Rules

2. In the *NPRM*, we propose to authorize television broadcasters to use the “Next Generation” broadcast television (Next Gen TV) transmission standard associated with recent work of the Advanced Television Systems Committee (ATSC 3.0) on a voluntary, market-driven basis, while they continue to deliver current-generation digital television (DTV) broadcast service, using the “ATSC 1.0 standard,” to their viewers.⁴ ATSC 3.0 is being developed by broadcasters with the intent of merging the capabilities of over-the-air broadcasting with the broadband viewing and information delivery methods of the Internet, using the same 6 MHz channels presently allocated for DTV. According to a coalition of broadcast and consumer electronics industry representatives that has petitioned the Commission to authorize the use of ATSC 3.0,⁵ this new standard has the potential to greatly improve broadcast signal reception, particularly on mobile devices and television receivers without outdoor antennas, and it will enable broadcasters to offer enhanced and innovative new features to consumers, including Ultra High Definition picture and immersive audio, more localized programming content, an advanced emergency alert system capable of waking up sleeping devices to warn consumers of imminent emergencies, better accessibility options, and interactive services. With today’s action, we aim to facilitate private sector innovation and promote American leadership in the global broadcast industry.

3. In this proceeding, we seek to adopt rules that will afford broadcasters flexibility to deploy ATSC 3.0-based transmissions, while minimizing the impact on, and costs to, consumers and other industry stakeholders. Among other matters, we seek public input on the following issues and proposals:

- *Voluntary Use.* We propose to authorize voluntary use of ATSC 3.0 transmissions and to incorporate by reference the relevant portions of the ATSC 3.0 standard into our rules. We seek comment on which components of the standard should be incorporated into our rules.
- *Local Simulcasting.* We propose to require “local simulcasting” for stations that choose to deploy Next Gen TV transmissions so that broadcasters will continue to provide their existing

¹ See 5 U.S.C. § 603. The RFA, see 5 U.S.C. §§ 601-612, has been amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), Pub. L. No. 104-121, Title II, 110 Stat. 857 (1996). The SBREFA was enacted as Title II of the Contract With America Advancement Act of 1996 (CWAAA).

² See 5 U.S.C. § 603(a).

³ See *id.*

⁴ For purposes of the *NPRM*, a “Next Gen TV” station means a station that is broadcasting its signal in both the ATSC 1.0 and the ATSC 3.0 standard in its local broadcast market.

⁵ Joint Petition for Rulemaking of America’s Public Television Stations, the AWARN Alliance, the Consumer Technology Association, and the National Association of Broadcasters, GN Docket No. 16-142 (filed Apr. 13, 2016), <https://www.fcc.gov/ecfs/filing/60001667342/document/60001701021> (Petition).

ATSC 1.0-based services to their viewers. We seek comment on a number of issues relating to the implementation of local simulcasting.

- *MVPD Carriage.* We propose that multichannel video programming distributors (MVPDs) be required to continue carrying broadcasters' ATSC 1.0 signals, but not be required to carry ATSC 3.0 signals during the Next Gen TV transition. We also seek comment on issues related to the voluntary carriage of ATSC 3.0 signals through the retransmission consent process.
- *Service and Interference Protection.* We seek comment on whether Next Gen TV transmissions will raise any interference concerns for existing DTV operations or for any other services or devices that operate in the TV bands or in adjacent bands. We propose to calculate Next Gen TV interference to DTV signals using the methodology and planning factors specified in OET Bulletin 69 (OET-69). We also propose to define a "DTV-equivalent" service area for the Next Gen TV signal using the methodology and planning factors defined for DTV in OET-69 and to define a protection threshold for Next Gen TV signals that would be as robust as an equivalent DTV signal. Moreover, we seek comment on what, if any, additional interference protections are necessary with respect to other services and devices that operate in the TV bands or adjacent bands.
- *Public Interest Obligations and Consumer Protection.* We propose that television stations transmitting signals in ATSC 3.0 be subject to the public interest obligations currently applicable to television broadcasters. In addition, we seek comment on our tentative conclusion that it is unnecessary at this time to adopt an ATSC 3.0 tuner mandate for new television receivers. We seek comment on whether broadcasters should be required to provide on-air notifications to educate consumers about their transition to Next Gen TV service and on how to ensure that deployment of Next Gen TV-based transmissions will not negatively impact the post-incentive auction transition process.

B. Legal Basis

4. The proposed action is authorized pursuant to Sections 1, 4, 301, 303, 307, 308, 309, 316, 319, 325(b), 336, 338, 399b, 403, 534, and 535 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 154, 301, 303, 307, 308, 309, 316, 319, 325(b), 336, 338, 399b, 403, 534, and 535.

C. Description and Estimate of the Number of Small Entities To Which the Proposed Rules Will Apply

5. The RFA directs agencies to provide a description of, and where feasible, an estimate of the number of small entities that may be affected by the proposed rules, if adopted.⁶ The RFA generally defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small governmental jurisdiction."⁷ In addition, the term "small business" has the same meaning as the term "small business concern" under the Small Business Act.⁸ A small business concern is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the SBA.⁹ Below, we provide a

⁶ 5 U.S.C. § 603(b)(3).

⁷ *Id.* § 601(6).

⁸ *Id.* § 601(3) (incorporating by reference the definition of "small-business concern" in 15 U.S.C. § 632). Pursuant to 5 U.S.C. § 601(3), the statutory definition of a small business applies "unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment, establishes one or more definitions of such term which are appropriate to the activities of the agency and publishes such definition(s) in the Federal Register." 5 U.S.C. § 601(3).

⁹ 15 U.S.C. § 632.

description of such small entities, as well as an estimate of the number of such small entities, where feasible.

6. Wired Telecommunications Carriers. The U.S. Census Bureau defines this industry as “establishments primarily engaged in operating and/or providing access to transmission facilities and infrastructure that they own and/or lease for the transmission of voice, data, text, sound, and video using wired communications networks. Transmission facilities may be based on a single technology or a combination of technologies. Establishments in this industry use the wired telecommunications network facilities that they operate to provide a variety of services, such as wired telephony services, including VoIP services, wired (cable) audio and video programming distribution, and wired broadband internet services. By exception, establishments providing satellite television distribution services using facilities and infrastructure that they operate are included in this industry.”¹⁰ The SBA has developed a small business size standard for Wired Telecommunications Carriers, which consists of all such companies having 1,500 or fewer employees.¹¹ Census data for 2012 shows that there were 3,117 firms that operated that year. Of this total, 3,083 operated with fewer than 1,000 employees.¹² Thus, under this size standard, the majority of firms in this industry can be considered small.

7. Cable Companies and Systems (Rate Regulation). The Commission has developed its own small business size standards for the purpose of cable rate regulation. Under the Commission’s rules, a “small cable company” is one serving 400,000 or fewer subscribers nationwide.¹³ Industry data indicate that there are currently 4,600 active cable systems in the United States.¹⁴ Of this total, all but nine cable operators nationwide are small under the 400,000-subscriber size standard.¹⁵ In addition, under the Commission’s rate regulation rules, a “small system” is a cable system serving 15,000 or fewer subscribers.¹⁶ Current Commission records show 4,600 cable systems nationwide.¹⁷ Of this total, 3,900 cable systems have fewer than 15,000 subscribers, and 700 systems have 15,000 or more subscribers, based on the same records.¹⁸ Thus, under this standard as well, we estimate that most cable systems are small entities.

8. Cable System Operators (Telecom Act Standard). The Communications Act also contains a size standard for small cable system operators, which is “a cable operator that, directly or through an affiliate, serves in the aggregate fewer than 1 percent of all subscribers in the United States and is not affiliated with any entity or entities whose gross annual revenues in the aggregate exceed \$250,000,000.”¹⁹ There are approximately 52,403,705 cable video subscribers in the United States

¹⁰ <http://www.census.gov/cgi-bin/sssd/naics/naicsrch>.

¹¹ See 13 CFR § 120.201, NAICS Code 517110.

¹² http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2012_US_51SSSZ2&prodType=table.

¹³ 47 CFR § 76.901(e).

¹⁴ Media Bureau estimates were based on data contained in the Commission’s Cable Operations and Licensing System (COALS) as of August 15, 2015. See www.fcc.gov/coals.

¹⁵ See SNL KAGAN at <https://www.snl.com/Interactivex/TopCableMSOs.aspx>.

¹⁶ 47 CFR § 76.901(c).

¹⁷ See footnote 15, *supra*.

¹⁸ See *id.*

¹⁹ 47 CFR § 76.901 (f) and notes ff. 1, 2, and 3.

today.²⁰ Accordingly, an operator serving fewer than 524,037 subscribers shall be deemed a small operator if its annual revenues, when combined with the total annual revenues of all its affiliates, do not exceed \$250 million in the aggregate.²¹ Based on available data, we find that all but nine incumbent cable operators are small entities under this size standard.²² We note that the Commission neither requests nor collects information on whether cable system operators are affiliated with entities whose gross annual revenues exceed \$250 million.²³ Although it seems certain that some of these cable system operators are affiliated with entities whose gross annual revenues exceed \$250 million, we are unable at this time to estimate with greater precision the number of cable system operators that would qualify as small cable operators under the definition in the Communications Act.

9. Direct Broadcast Satellite (“DBS”) Service. DBS Service is a nationally distributed subscription service that delivers video and audio programming via satellite to a small parabolic “dish” antenna at the subscriber’s location. DBS is now included in SBA’s economic census category “Wired Telecommunications Carriers.” The Wired Telecommunications Carriers industry is defined in paragraph 6, *supra*. By exception, establishments providing satellite television distribution services using facilities and infrastructure that they operate are included in this industry.²⁴ The SBA determines that a wireline business is small if it has fewer than 1,500 employees.²⁵ Census data for 2012 indicate that 3,117 wireline firms were operational during that year. Of that number, 3,083 operated with fewer than 1,000 employees.²⁶ Based on that data, we conclude that the majority of wireline firms are small under the applicable standard. However, based on more recent data developed internally by the FCC, currently only two entities provide DBS service, which requires a great deal of capital for operation: DIRECTV and DISH Network.²⁷ Accordingly, we must conclude that internally developed FCC data are persuasive that in general DBS service is provided only by large firms.

10. Satellite Master Antenna Television (SMATV) Systems, also known as Private Cable Operators (PCOs). SMATV systems or PCOs are video distribution facilities that use closed transmission paths without using any public right-of-way. They acquire video programming and distribute it via terrestrial wiring in urban and suburban multiple dwelling units such as apartments and condominiums, and commercial multiple tenant units such as hotels and office buildings. SMATV systems or PCOs are now included in the SBA’s broad economic census category, Wired Telecommunications Carriers,²⁸

²⁰ See SNL KAGAN at www.snl.com/interactivex/MultichannelIndustryBenchmarks.aspx.

²¹ 47 CFR § 76.901(f) and notes ff. 1, 2, and 3.

²² See SNL KAGAN at <https://www.snl.com/Interactivex/TopCableMSOs.aspx>.

²³ The Commission does receive such information on a case-by-case basis if a cable operator appeals a local franchise authority’s finding that the operator does not qualify as a small cable operator pursuant to section 76.901(f) of the Commission’s rules. See 47 CFR § 76.901(f).

²⁴ <http://www.census.gov/cgi-bin/sssd/naics/naicsrch>.

²⁵ NAICS code 517110; 13 CFR § 121.201.

²⁶

http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2012_US_51SSSZ5&prodType=table.

²⁷ See *Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, Fifteenth Report, 28 FCC Rcd 10496, 10507, para. 27 (2013). As of June 2012, DIRECTV is the largest DBS operator and the second largest MVPD in the United States, serving 19.9 million subscribers. DISH Network is the second largest DBS operator and the third largest MVPD operator, serving 14 million subscribers. *Id.* at 10507, 10546, paras. 27, 110-11.

²⁸ This category is defined in paragraph 6, *supra*.

which was developed for small wireline businesses. The SBA has developed a small business size standard for Wired Telecommunications Carriers, which consists of all such companies having 1,500 or fewer employees.²⁹ Census data for 2012 shows that there were 3,117 firms that operated that year. Of this total, 3,083 operated with fewer than 1,000 employees.³⁰ Thus, under this size standard, the majority of firms in this industry can be considered small.

11. Home Satellite Dish (HSD) Service. HSD or the large dish segment of the satellite industry is the original satellite-to-home service offered to consumers, and involves the home reception of signals transmitted by satellites operating generally in the C-band frequency. Unlike DBS, which uses small dishes, HSD antennas are between four and eight feet in diameter and can receive a wide range of unscrambled (free) programming and scrambled programming purchased from program packagers that are licensed to facilitate subscribers' receipt of video programming. Because HSD provides subscription services, HSD falls within the SBA-recognized definition of Wired Telecommunications Carriers.³¹ The SBA has developed a small business size standard for Wired Telecommunications Carriers, which consists of all such companies having 1,500 or fewer employees.³² Census data for 2012 shows that there were 3,117 firms that operated that year. Of this total, 3,083 operated with fewer than 1,000 employees.³³ Thus, under this size standard, the majority of firms in this industry can be considered small.

12. Open Video Services. The open video system (OVS) framework was established in 1996, and is one of four statutorily recognized options for the provision of video programming services by local exchange carriers.³⁴ The OVS framework provides opportunities for the distribution of video programming other than through cable systems. Because OVS operators provide subscription services,³⁵ OVS falls within the SBA small business size standard covering cable services, which is Wired Telecommunications Carriers.³⁶ The SBA has developed a small business size standard for Wired Telecommunications Carriers, which consists of all such companies having 1,500 or fewer employees.³⁷ Census data for 2012 shows that there were 3,117 firms that operated that year. Of this total, 3,083 operated with fewer than 1,000 employees.³⁸ Thus, under this size standard, the majority of firms in this industry can be considered small. In addition, we note that the Commission has certified some OVS operators, with some now providing service.³⁹ Broadband service providers (BSPs) are currently the only

²⁹ See 13 CFR § 120.201, NAICS Code 517110.

³⁰ http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2012_US_51SSSZ2&prodType=table.

³¹ This category is defined in paragraph 6, *supra*.

³² See 13 CFR § 120.201, NAICS Code 517110.

³³ http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2012_US_51SSSZ2&prodType=table.

³⁴ 47 U.S.C. § 571(a)(3)-(4). See *Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, Thirteenth Annual Report, 24 FCC Rcd 542, 606, para. 135 (2009) (*13th Annual Competition Report*).

³⁵ See 47 U.S.C. § 573.

³⁶ This category is defined in paragraph 6, *supra*.

³⁷ See 13 CFR § 120.201, NAICS Code 517110.

³⁸ http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2012_US_51SSSZ2&prodType=table.

³⁹ A list of OVS certifications may be found at <https://www.fcc.gov/general/current-filings-certification-open-video-systems#block-menu-block-4>.

significant holders of OVS certifications or local OVS franchises.⁴⁰ The Commission does not have financial or employment information regarding the entities authorized to provide OVS, some of which may not yet be operational. Thus, again, at least some of the OVS operators may qualify as small entities.

13. Wireless Cable Systems – Broadband Radio Service and Educational Broadband Service. Wireless cable systems use the Broadband Radio Service (BRS)⁴¹ and Educational Broadband Service (EBS)⁴² to transmit video programming to subscribers. In connection with the 1996 BRS auction, the Commission established a small business size standard as an entity that had annual average gross revenues of no more than \$40 million in the previous three calendar years.⁴³ The BRS auctions resulted in 67 successful bidders obtaining licensing opportunities for 493 Basic Trading Areas (BTAs). Of the 67 auction winners, 61 met the definition of a small business. BRS also includes licensees of stations authorized prior to the auction. At this time, we estimate that of the 61 small business BRS auction winners, 48 remain small business licensees. In addition to the 48 small businesses that hold BTA authorizations, there are approximately 392 incumbent BRS licensees that are considered small entities.⁴⁴ After adding the number of small business auction licensees to the number of incumbent licensees not already counted, we find that there are currently approximately 440 BRS licensees that are defined as small businesses under either the SBA or the Commission's rules. In 2009, the Commission conducted Auction 86, the sale of 78 licenses in the BRS areas.⁴⁵ The Commission offered three levels of bidding credits: (i) a bidder with attributed average annual gross revenues that exceed \$15 million and do not exceed \$40 million for the preceding three years (small business) received a 15 percent discount on its winning bid; (ii) a bidder with attributed average annual gross revenues that exceed \$3 million and do not exceed \$15 million for the preceding three years (very small business) received a 25 percent discount on its winning bid; and (iii) a bidder with attributed average annual gross revenues that do not exceed \$3 million for the preceding three years (entrepreneur) received a 35 percent discount on its winning bid.⁴⁶ Auction 86 concluded in 2009 with the sale of 61 licenses.⁴⁷ Of the 10 winning bidders, two bidders that claimed small business status won four licenses; one bidder that claimed very small business status won three licenses; and two bidders that claimed entrepreneur status won six licenses.

⁴⁰ See *13th Annual Competition Report*, 24 FCC Rcd at 606-07, para. 135. BSPs are newer businesses that are building state-of-the-art, facilities-based networks to provide video, voice, and data services over a single network.

⁴¹ BRS was previously referred to as Multipoint Distribution Service (MDS) and Multichannel Multipoint Distribution Service (MMDS). See *Amendment of Parts 21 and 74 of the Commission's Rules with Regard to Filing Procedures in the Multipoint Distribution Service and in the Instructional Television Fixed Service and Implementation of Section 309(j) of the Communications Act—Competitive Bidding*, Report and Order, 10 FCC Rcd 9589, 9593, para. 7 (1995).

⁴² EBS was previously referred to as the Instructional Television Fixed Service (ITFS). See *id.*

⁴³ 47 CFR § 21.961(b)(1).

⁴⁴ 47 U.S.C. § 309(j). Hundreds of stations were licensed to incumbent MDS licensees prior to implementation of Section 309(j) of the Communications Act of 1934, 47 U.S.C. § 309(j). For these pre-auction licenses, the applicable standard is SBA's small business size standard of 1,500 or fewer employees.

⁴⁵ *Auction of Broadband Radio Service (BRS) Licenses, Scheduled for October 27, 2009, Notice and Filing Requirements, Minimum Opening Bids, Upfront Payments, and Other Procedures for Auction 86*, Public Notice, 24 FCC Rcd 8277 (2009).

⁴⁶ *Id.* at 8296.

⁴⁷ *Auction of Broadband Radio Service Licenses Closes, Winning Bidders Announced for Auction 86, Down Payments Due November 23, 2009, Final Payments Due December 8, 2009, Ten-Day Petition to Deny Period*, Public Notice, 24 FCC Rcd 13572 (2009).

14. In addition, the SBA's placement of Cable Television Distribution Services in the category of Wired Telecommunications Carriers is applicable to cable-based Educational Broadcasting Services. Since 2007, these services have been defined within the broad economic census category of Wired Telecommunications Carriers, which was developed for small wireline businesses. This category is defined in paragraph 6, *supra*. The SBA has developed a small business size standard for Wired Telecommunications Carriers, which consists of all such companies having 1,500 or fewer employees.⁴⁸ Census data for 2012 shows that there were 3,117 firms that operated that year. Of this total, 3,083 operated with fewer than 1,000 employees.⁴⁹ Thus, under this size standard, the majority of firms in this industry can be considered small. In addition to Census data, the Commission's internal records indicate that as of September 2012, there are 2,241 active EBS licenses.⁵⁰ The Commission estimates that of these 2,241 licenses, the majority are held by non-profit educational institutions and school districts, which are by statute defined as small businesses.⁵¹

15. Incumbent Local Exchange Carriers (ILECs) and Small Incumbent Local Exchange Carriers. Neither the Commission nor the SBA has developed a small business size standard specifically for incumbent local exchange services. ILECs and small ILECs are included in the SBA's economic census category, Wired Telecommunications Carriers.⁵² The SBA has developed a small business size standard for Wired Telecommunications Carriers, which consists of all such companies having 1,500 or fewer employees.⁵³ Census data for 2012 shows that there were 3,117 firms that operated that year. Of this total, 3,083 operated with fewer than 1,000 employees.⁵⁴ Thus, under this size standard, the majority of firms in this industry can be considered small.

16. Competitive Local Exchange Carriers (CLECs), Competitive Access Providers (CAPs), Shared-Tenant Service Providers, and Other Local Service Providers. Neither the Commission nor the SBA has developed a small business size standard specifically for these service providers. These entities are included in the SBA's economic census category, Wired Telecommunications Carriers.⁵⁵ The SBA has developed a small business size standard for Wired Telecommunications Carriers, which consists of all such companies having 1,500 or fewer employees.⁵⁶ Census data for 2012 shows that there were 3,117 firms that operated that year. Of this total, 3,083 operated with fewer than 1,000 employees.⁵⁷ Thus, under this size standard, the majority of firms in this industry can be considered small.

⁴⁸ See 13 CFR § 120.201, NAICS Code 517110.

⁴⁹ http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2012_US_51SSSZ2&prodType=table.

⁵⁰ <http://wireless2.fcc.gov/UlsApp/UlsSearch/results.jsp>.

⁵¹ The term "small entity" within SBREFA applies to small organizations (non-profits) and to small governmental jurisdictions (cities, counties, towns, townships, villages, school districts, and special districts with populations of less than 50,000). 5 U.S.C. §§ 601(4)-(6).

⁵² This category is defined in paragraph 6, *supra*.

⁵³ See 13 CFR § 120.201, NAICS Code 517110.

⁵⁴ http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2012_US_51SSSZ2&prodType=table.

⁵⁵ That category is defined in paragraph 6, *supra*.

⁵⁶ See 13 CFR § 120.201, NAICS Code 517110.

⁵⁷ http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2012_US_51SSSZ2&prodType=table.

17. Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing. This industry comprises establishments primarily engaged in manufacturing radio and television broadcast and wireless communications equipment. Examples of products made by these establishments are: transmitting and receiving antennas, cable television equipment, GPS equipment, pagers, cellular phones, mobile communications equipment, and radio and television studio and broadcasting equipment.⁵⁸ The Small Business Administration has established a size standard for this industry of 750 employees or less.⁵⁹ Census data for 2012 show that 841 establishments operated in this industry in that year. Of that number, 819 establishments operated with less than 500 employees.⁶⁰ Based on this data, we conclude that a majority of manufacturers in this industry are small.

18. Audio and Video Equipment Manufacturing. This industry comprises establishments primarily engaged in manufacturing electronic audio and video equipment for home entertainment, motor vehicles, and public address and musical instrument amplification. Examples of products made by these establishments are video cassette recorders, televisions, stereo equipment, speaker systems, household-type video cameras, jukeboxes, and amplifiers for musical instruments and public address systems.⁶¹ The SBA has established a size standard for this industry, in which all firms with 750 employees or less are small.⁶² According to U.S. Census data for 2012, 466 audio and video equipment manufacturers were operational in that year. Of that number, 465 operated with fewer than 500 employees.⁶³ Based on this Census data and the associated size standard, we conclude that the majority of such manufacturers are small.

19. Television Broadcasting. This economic Census category “comprises establishments primarily engaged in broadcasting images together with sound. These establishments operate television broadcasting studios and facilities for the programming and transmission of programs to the public.”⁶⁴ These establishments also produce or transmit visual programming to affiliated broadcast television stations, which in turn broadcast the programs to the public on a predetermined schedule. Programming may originate in their own studio, from an affiliated network, or from external sources. The SBA has created the following small business size standard for Television Broadcasting firms: those having \$38.5 million or less in annual receipts.⁶⁵ The 2012 economic Census reports that 751 television broadcasting firms operated during that year. Of that number, 656 had annual receipts of less than \$25 million per year. Based on that Census data we conclude that a majority of firms that operate television stations are small. We therefore estimate that the majority of commercial television broadcasters are small entities.

⁵⁸ <https://www.census.gov/cgi-bin/sssd/naics/naicsrch>.

⁵⁹ 13 CFR § 121.201, NAICS Code 334220

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http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2012_US_31SG2&prodType=table.

⁶¹ <http://www.census.gov/cgi-bin/sssd/naics/naicsrch>.

⁶² 13 CFR 121.201, NAICS Code 334310.

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http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ECN_2007_US_31SG3&prodType=table.

⁶⁴ U.S. Census Bureau, 2012 NAICS Code Economic Census Definitions, <https://www.census.gov/cgi-bin/sssd/naics/naicsrch>.

⁶⁵ 13 CFR § 121.201, NAICS code 515120.

20. We note, however, that in assessing whether a business concern qualifies as small under the above definition, business (control) affiliations must be included.⁶⁶ Our estimate, therefore, likely overstates the number of small entities that might be affected by our action because the revenue figure on which it is based does not include or aggregate revenues from affiliated companies. In addition, an element of the definition of “small business” is that the entity not be dominant in its field of operation. We are unable at this time to define or quantify the criteria that would establish whether a specific television station is dominant in its field of operation. Accordingly, the estimate of small businesses to which rules may apply does not exclude any television station from the definition of a small business on this basis and is therefore possibly over-inclusive to that extent.

21. In addition, the Commission has estimated the number of licensed noncommercial educational (NCE) television stations to be 395.⁶⁷ These stations are non-profit, and therefore considered to be small entities.⁶⁸

22. There are also 2,344 LPTV stations, including Class A stations, and 3689 TV translator stations.⁶⁹ Given the nature of these services, we will presume that all of these entities qualify as small entities under the above SBA small business size standard.

D. Description of Projected Reporting, Recordkeeping, and Other Compliance Requirements

23. The *NPRM* proposes to authorize television broadcasters to use the Next Gen TV transmission standard associated with ATSC 3.0 on a voluntary, market-driven basis, while they continue to deliver current-generation DTV broadcast service, using the ATSC 1.0 standard, to their viewers. Under the proposal, Next Gen TV broadcasters that have elected must-carry rights would be required to notify MVPDs prior to transitioning to ATSC 3.0 and arranging for an ATSC 1.0 simulcast. MVPDs would be required to continue carrying broadcasters’ ATSC 1.0 signals, but would not be required to carry ATSC 3.0 signals, during the Next Gen TV transition. Rather, MVPD carriage of ATSC 3.0 signals would be determined through retransmission consent negotiations. With regard to equipment, the Commission tentatively concludes that it is unnecessary at this time to adopt an ATSC 3.0 tuner mandate for new television receivers.

E. Steps Taken to Minimize Significant Economic Impact on Small Entities and Significant Alternatives Considered

24. The RFA requires an agency to describe any significant alternatives that it has considered in reaching its proposed approach, which may include the following four alternatives (among others): “(1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance and reporting requirements under the rule for such small entities; (3) the use of performance, rather than design standards; and (4) an exemption from coverage of the rule, or any part thereof, for small entities.”⁷⁰

25. *Broadcasters.* As stated above, the *NPRM* proposes that broadcaster use of Next Gen TV would be voluntary. We note additionally that the Commission is considering whether small, rural, low-

⁶⁶ “[Business concerns] are affiliates of each other when one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.” 13 CFR § 121.103(a)(1).

⁶⁷ See FCC News Release, Broadcast Station Totals as of March 31, 2015 (rel. Apr. 8, 2015).

⁶⁸ See generally 5 U.S.C. § 601(4), (6).

⁶⁹ See FCC News Release, Broadcast Station Totals as of March 31, 2015 (rel. Apr. 8, 2015).

⁷⁰ 5 U.S.C. § 603(c)(1)-(c)(4).

power, and NCE broadcasters would face unique circumstances with regard to the voluntary provision of ATSC 3.0. In the event that a broadcaster chooses to use Next Gen TV, the Commission is considering how to handle issues related to interference that may occur with a voluntary transition to Next Gen TV. The Commission is considering whether to require broadcasters that choose to transition to notify MVPDs and television viewers about the transition via written and on-air notices, respectively. The Commission is also considering an alternative approach, under which simulcast arrangements could be implemented without additional licensing (beyond conversion of the broadcaster's current facility to operate in ATSC 3.0), whereby some broadcasters would be licensed to operate only an ATSC 3.0 facility and others would be licensed to operate only on ATSC 1.0 facility. The *NPRM* states that the multicast approach to simulcasting may minimize administrative burdens and offer more flexibility to the broadcast industry. On the other hand, it would appear to preclude NCE stations from serving as hosts to the simulcast programming of commercial stations due to the restrictions of Section 399B.

26. *MVPDs.* The *NPRM* considers issues related to the voluntary carriage of ATSC 3.0 signals through the retransmission consent process. As stated in the *NPRM*, MVPDs have raised numerous questions about MVPD carriage of ATSC 3.0 signals, including the potentially significant costs and burdens associated with MVPD carriage of ATSC 3.0 signals. The *NPRM* specifically considers the alternative approach of prohibiting MVPD carriage of ATSC 3.0 signals through retransmission consent negotiations until the ATSC Specialist Group on Conversion and Redistribution of ATSC 3.0 Service produces its initial report, which would ease any burdens of the carriage of ATSC 3.0 signals on MVPDs.

27. *Equipment manufacturers.* Finally, with regard to equipment manufacturers, the Commission is considering whether to require television receivers manufactured after a certain date to include the capability to receive ATSC 3.0 signals. In the *NPRM*, the Commission reaches the tentative conclusion that it is unnecessary at this time to adopt an ATSC 3.0 tuner mandate for new television receivers. This approach of instead relying on the market potentially could minimize any impact of the new rules on equipment manufacturers, including smaller manufacturers. If the Commission decides not to adopt a Next Gen TV tuner mandate at this time, the Commission is considering whether it should revise Section 15.117(b) of its rules to make clear that this rule does not apply to ATSC 3.0.

28. The *NPRM* seeks comment on the above issues, with the goal of easing the economic burdens of the new rules and policies on small entities.

F. Federal Rules that May Duplicate, Overlap, or Conflict With the Proposed Rule

29. None.