



NEXTGEN TV promises better audio/video and enhanced data services.

NEXTGEN TV — the go-to-market name for ATSC 3.0 IP-enabled broadcast transmission — provides cleaner audio and video, sharper voice clarity, more uniform volume across channels and 4K Ultra HD and High Dynamic Range (HDR) images. Some NEXTGEN TV broadcasts are also enhanced with interactive internet content to get the most out of live sports, news and events in real time. When it comes to NEXTGEN TV, the numbers look good:

- About 120 TV stations in 30 U.S. cities are transmitting ATSC 3.0 signals, as of July. By Labor Day, 50% of U.S. homes will be within reach of a NEXTGEN TV signal (although only a scant number will be able to see the content they're carrying).
- Nearly five dozen NEXTGEN TV models from LG Electronics, Samsung and Sony are on the market, with more manufacturers expected to add products in coming months.
- More than two million NEXTGEN TV sets will be sold this year (5% of total receiver sales), and those numbers will grow to 20 million sets (47%) within three years, according to the Consumer Technology Association's (CTA) latest *U.S. Consumer Technology Five-Year Industry Forecast*. That would put the new receivers in nearly one-third of American homes by 2024.

Beyond the numbers, the advanced TV community of broadcasters, receiver manufacturers, technology providers, advertisers, automotive companies and others have been hustling to develop services and systems. They are rolling out projects such as cable integration to assure that the 3.0 signals can be viewed via existing cable TV subscribers, interactive pay TV services that compete with cable/satellite video in rural areas, plus an expansive "Motown 3.0 Test Track" project that is using Detroit TV stations to show automakers the data services potential of the broadcast technology.

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Moreover, the TV owners involved in NEXTGEN TV rollouts are buoyed by responses to a Magid research study this spring in which 60% of TV viewers said they'd buy the new 3.0 technology within three years of its availability. And the broadcasters are looking forward to a showcase rollout in Washington, D.C., scheduled for late summer — an “all-encompassing effort” that will include most local stations, the National Association of Broadcasters, Howard University (licensee of a public TV channel) plus the Pearl TV consortium and Sinclair Broadcasting Group — two of the major promoters of NEXTGEN TV.

In short, a lot has happened since the Federal Communications Commission (FCC) authorized broadcasters to voluntarily launch Internet Protocol-based advanced television services in November 2017, which was followed by the Advanced Television Systems Committee's final adoption of its ATSC 3.0 standard in September 2019. The “NEXTGEN TV” brand emerged at the same time.

“Based on early feedback from consumers and from broadcasters' research, viewers are excited about NEXTGEN TV,” says Brian Markwalter, CTA's senior vice president of research and standards. “They particularly like the enhanced and interactive content provided by ATSC 3.0 integration of broadcast and IP services, which gives them additional content information, on-demand video and premium viewing experiences with 4K UHD and HDR.”

Markwalter also cites positive response to the immersive audio and especially “the unique capability called Voice + that lets you hear the dialog very clearly.” He expects that after absorbing the “enhanced live programming” that NEXTGEN TV delivers, consumers will enjoy discovering “the additional benefits of interactivity and upgradeability.”

CTA expects that converter boxes (set-top devices that will enable existing TV sets to receive and display NEXTGEN TV signals) will accelerate adoption, although they will play a different role than the converter boxes did during the transition from analog to digital TV in the early 2000s. This time there will be no government subsidized vouchers and no hard cut-off date for the old technology, so the migration schedule to NEXTGEN TV is still a little fuzzy.



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— John Taylor of LGE



Top: John Taylor, senior vice president at LGE

Above: Nick Colsey, vice president of business development at Sony Electronics.

But the improved all-Internet Protocol signal — including its audio and data flexibility — is strong. Hence companies in the 3.0 ecosystem are counting on rapid adoption. NEXTGEN TV broadcasts can deliver 4K Ultra HD video quality, HDR displays, theater-like sound and expanded mobile reception.

CTA's forecast expects NEXTGEN TV sets will account for 9% of TV sets shipped next year, climbing to 47% by 2024. That equates to four million units in 2022, 11 million in 2023 and 20 million in 2024.

MANUFACTURERS' COMMITMENTS

Sony has plunged into the NEXTGEN TV world wholeheartedly. Almost every TV set (40 models) it sells in the U.S. this year will be able to receive the ATSC 3.0 signal, says Nick Colsey, vice president of business development at Sony Electronics.

In addition to its line of NEXTGEN TV receivers, Sony has been involved in most of the field trials during recent years and its engineers have worked on the technical definitions and test of the standard. Another Sony group makes 3.0 semiconductors that are used in Sony and other brands' TV receivers. Sony is also participating in the “Motown 3.0 Test Track” automotive project in Detroit, using a tuner/demodulator which is optimized for mobile use case, Colsey adds.

LG Electronics USA has been involved throughout the 3.0 evolution. As a co-inventor of the standard, it has been collaborating with broadcasters during the development process and was the first manufacturer to supply equipment for the Phoenix pilot market trial, explains LGE Senior Vice President John Taylor. Since the company has also had mobile and automotive units, it has leveraged its capabilities “as a key technology partner” in the Motown 3.0 Test Track project, he adds, focusing on opportunities for telematics and navigation updates, software upgrades, sensors and infotainment.

Taylor says that LG has “focused on the premium segment, marrying the superior performance of LG OLED and the new features unlocked by ATSC 3.0.” Among its video devices being used in rollouts are 4K and 8K OLED NEXTGEN TVs ranging from 55- to 88-inches. “As the number of stations offering NEXTGEN TV service grows, we anticipate strong growth for ATSC 3.0 receivers,” Taylor says. “Despite the pandemic effect, the uptake of NEXTGEN TV broadcasting in the U.S. over the past year has been nothing short of phenomenal.”

Dan Schinasi, director of Samsung Product Planning, says Samsung was one of the first TV set makers to participate in Pearl TV's pilot field trial in Phoenix and that the company continues to maintain a lab there. Samsung is also active in the virtual InterOp that the National Association of Broadcasters is facilitating in Santa Barbara, CA, which Schinasi says is different from a typical, face-to-face InterOp. For the ongoing Santa Barbara project, "all resources are secure and online, enabling our engineers around the world to participate 24/7," which he says will assure that receivers are "top quality as broadcasters roll out advanced services for viewers."

Samsung has also been involved in ATSC 3.0 automotive projects since January 2019 when it teamed up with subsidiary Harman plus SK Telecom in Korea and Sinclair Broadcast Group. Schinasi says more details about this mobile broadcast-based project will be revealed in coming months. Schinasi, who chairs the CTA Video Promotions Working Group, expects that the NEXTGEN TV project in Portland, OR, to test the compatibility of broadcast signals over cable TV networks, "will benefit television viewers in that they can see the 4K content and hear higher quality audio that ATSC 3.0 makes possible."

He adds, "Consumers who have invested in top-end displays and audio systems will experience the greatest benefit from distribution of NEXTGEN TV services, whether over-the-air, via broadband, over cable, or from satellites." Samsung will have 20 NEXTGEN TV models by the end of this year in the U.S.

MOBILE DATA IN MOTOWN

Data delivery is another broadcaster opportunity for the ATSC 3.0 bandwidth, and TV stations are going after it aggressively, starting with an automotive courtship. Pearl TV, the consortium of nine broadcast groups which is promoting uses for ATSC 3.0 technology, has organized the "Motown 3.0 Open Test Track" in Detroit, a project that involves the city's five major broadcast channels. The field trial transmits in-vehicle entertainment as well as software programming data updates and is adding services for rental cars, car-sharing fleets, school bus operators and long-haul trucks, including autonomous vehicles.



Top: Dan Schinasi, director of Samsung Product Planning.

Above: Anne Schelle, managing director of Pearl TV

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Avis, the rental car firm, and its subsidiary Zipcar, the car-sharing service, are among the automotive firms in the trial. Pearl TV is also working with trucking companies to develop a reference design for truck fleets, including for use in self-driving vehicles.

Pearl TV picked Detroit as the test site for the vehicle project because the legacy car makers and their major suppliers are based there. But Anne Schelle, managing director of Pearl TV, has invited non-U.S.-based manufacturers to participate. It is intended to "show automakers what's possible with ATSC 3.0 and to merge automotive applications with NEXTGEN TV," Schelle explains.

The Detroit project builds on "some early testing with Sony in Phoenix," Schelle adds, referring to the Phoenix Model Market, where the Pearl group established a test site in 2017, that was expanded in 2020. Five Detroit TV stations have carved out part of their 3.0 spectrum for exclusive use by the auto industry and its vendors in the hope of introducing them to the affordability and efficiency of the spectrum.

Kerry Oslund, vice president of strategy and business development at E.W. Scripps (which owns two of the participating Detroit TV stations), characterizes the ATSC 3.0 service as "ultra-affordable data for rolling computers." He says the consortium has talked to autonomous trucking companies, big school bus lease operators and rental car fleets.

CABLE COLLABORATION

Pearl TV has also been coordinating a "technical integration" project in Portland, OR, with Comcast cable, to assure that NEXTGEN TV signals pass cleanly through the cable system. Although some cable organizations initially opposed broadcasters' plans to demand retransmission of the 3.0 signals through the cable infrastructure (a long-standing contentious situation), Comcast and others seek to assure that there will be no technical glitches when and if they do carry the 3.0 signals.

“We have to think about this in stages with the cable companies,” Schelle explains. “We’re working through the different technical aspects of integration including ecosystem support.” The results of that process will “allow the business folk to have discussions when the time is right around business issues.”

Schelle says the tests so far have generated valuable information for future technical integration of ATSC 3.0 signals via cable. She adds that Pearl TV is “discussing the technical integration considerations” with CableLabs, Comcast, Cox and other large MSOs for future implementations of NEXTGEN TV via cable.

Among the services that are being evaluated are formatted video and High Dynamic Range (HDR) video, a key feature in 4K Ultra HD television. The seven Portland TV stations will also add data applications to the technical trial.

“There is value in these applications, such as emergency alerts, multilingual service and rich-media alerting,” Schelle says, emphasizing the potential enhancement for cable customers. “As we look at it, there will be applications that are seamless between cable and over-the-air TV, such as sports betting and shopping.” She describes a NEXTGEN platform, now in development, that includes a framework for “enhancing content” for various interactive features.

Schelle says the NEXTGEN platform will enable “opening up layers to applications developers.” This “framework for enhancing content” has not been part of the Portland trial, which has focused until now strictly on technical factors.

Among other new ventures are the “EVOCA” pay TV service for ATSC 3.0, developed by Edge Networks and aimed at offering a rural market alternative to cable



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TV and satellite video. Edge Networks CEO Todd Achilles introduced the NEXTGEN TV service in his company’s hometown Boise, ID, last year and is rolling it into Phoenix, AZ. Evoca is already in the market with a receiver that receives “in the clear” ATSC 3.0 signals as well as encrypted channels via broadcast and internet sources.

Evoca TV, which calls itself an “OTA-OTT” [over-the-air/over-the-top] hybrid pay TV service has begun transmitting “Evoca Learn,” a free ATSC 3.0 programming service, and a Basque-language channel to reach the Basque community (about 15,000 people) in Boise, using programming from a Basque channel in Spain. The educational service will feature interactivity, such as quizzes to gauge what they’ve learned and keep them engaged, Achilles explains.

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WHERE CAN I WATCH NEXTGEN TV NOW?



▶ LOOKING FOR MORE NEXTGEN TV IDEAS?

To keep track of the fast-evolving world of NEXTGEN TV, check out these online resources from major players in the migration to ATSC 3.0.

Advanced Television Systems Committee: atsc.org/

Consumer Technology Association: cta.tech/Membership/Member-Groups/Video-Division/NEXTGEN-TV

Evoca TV: <https://evoca.tv>

Industry Sources (Maintained by Pearl TV): watchnextgentv.com/

Pearl TV Consortium: <https://pearl.tv.com/>

Sinclair Broadcasting Group (ONE Media 3.0 subsidiary): <https://onemediallc.com/>