

Start Preparing for New TV Standard

NEXTGEN TV – the latest branding for ATSC 3.0 – has clear technical and moneymaking advantages over ATSC 1.0, the current standard for TV broadcasting and linear cable TV.

By Steven S. Ross / *Broadband Communities*

After five years of development and a successful 2017 rollout in South Korea, the Advanced Television Systems Committee's latest standard, ATSC 3.0, is poised to make an important contribution to the universe of broadband options. For broadband providers, the best advice is to start preparing for it, and to start writing it into business plans. Adoption is inevitable and desirable, although few network deployers will see an immediate business reason.

ATSC 3.0 is for over-the-air broadcasting but is based on the same Internet Protocol (IP) technology that over-the-top, other video-on-demand services and many cable systems already use. The standard accommodates more flexibility for broadcasters, allowing them to transmit data that can enhance TV broadcasts and deliver them optimized for everything from 4K Ultra HD to mobile phones.

Current broadcast TV stations will not have to change their over-the-air signals to the ATSC 3.0 format during an FCC-mandated transition period that will last at least seven years, but new content (especially games) and advertising revenue opportunities will likely emerge to speed the transition along.

After all, the first ATSC 3.0-capable TV sets won't be on the U.S. market until later this year. But what happens as the penetration of new TV sets quickly increases? And what about customers who do most of their TV viewing on a computer, tablet or smartphone and can receive digital TV content through a broadband connection now?

SOME SCENARIOS ATSC 3.0 CREATES

Cooperation among cellular and wireless broadband providers. With 5G cellular alone, microcells would have to be spaced every 200 to 500 feet unless fiber backhaul is available. TV broadcasters could end up with some extra bandwidth on each 6-MHz channel if they don't use all ATSC 3.0 features, and that bandwidth could be rented or swapped with broadband providers. Likewise, content providers could switch between cellular and ATSC seamlessly for secure (as far as viewing rights are concerned) over-the-air delivery to phones equipped with ATSC chips. There have been experiments with the idea in the United States (especially in New Jersey and in Phoenix) and in South Korea. There could be cooperation between satellite and cable/broadband deployers as well.

New revenue opportunities for broadcasters.

ATSC 3.0 allows new video formats as well as more flexible

and intelligent audio encoding and multiplexing, new signal redundancy tricks, advertising zoning and even customer geotargeting. Although a few vendors specializing in regional custom ad insertion do exist, traditional cable companies and telcos that deliver video have rarely been able to do these things. In fact, most telcos have even discouraged inclusion of broadcast TV reception capability on cell phones. Those days are over.

New help for hearing impairment. Almost 40 million adults have some hearing difficulties, and the percentage is increasing as the population ages. ATSC 3.0, by allowing many more separate audio streams, could allow consumers to separate dialog and background audio and customize their TV audio experience in other ways as well.

Driverless vehicles. Automakers looking at control of driverless vehicles dream of optimizing traffic flow, especially in congested urban areas, by sharing data among cars. The expected technology to do that will be cellular, but 5G so far takes too long to establish a communication session between each car and each microcell. An IP-based broadcast platform could deliver data and software updates to all vehicles in an area at once – even millions of them. That frees up the cellular system to handle mainly data back from vehicles that would be aggregated for broadcast. Detroit-based broadcasters are collaborating in an early ATSC deployment that automakers may use as a testbed for that.

Last year, the International Telecommunication Union endorsed ATSC 3.0 as a "recommended" digital broadcast standard. It is likely that ATSC 3.0 will become the only worldwide digital broadcast standard – subject to revisions but not a complete overhaul – until 3D broadcasting evolves. That said, only 60 TV stations in the United States (out of 1,700, of which about 900 are full-power) are expected to be broadcasting an ATSC 3.0 signal by the end of 2020.

The biggest barrier? The technology is cheap, but broadcasters are short of funds, and ATSC 3.0 threatens existing revenue streams, especially fees broadband deployers pay for mandatory carriage of local, full-power broadcast TV signals. Those fees average more than \$11 per cable subscriber now and even more for subscribers to small broadband networks. Stations see only part of that. ❖

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