BROADCAST TV'S FUTURE

2022

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NextGen Broadcast upgrades our existing, "over-the-air," antenna TV system by establishing a new technical framework for how those TV signals are created, transmitted and received. It supports higher resolutions like 4K (ultra-high definition), along with much better, immersive sound. It's also intended to work hand-in-hand with Internet access to provide a richer, more interactive experience, blending broadcast with broadband. Importantly, it is mobile so that TV and other data can now be received on-the-go. And, for the first time, it allows for broadcast channels to relay more than just TV programming but lots of other types of data, since it is based on the same "Internet Protocol" language of the Web.

WHAT IS NEXTGEN BROADCAST?

NextGen Broadcast is the latest version of the Advanced Television Systems Committee standards – otherwise known as ATSC 3.0 – defining how exactly television signals are broadcast and processed by receivers.

The switch to digital from analog transmission in 2009 improved picture (high definition and theatre-like aspect ratio for receivers) and sound quality (stereo), but it also laid the groundwork for a vast new world of broadcast content and interactivity. Unfortunately, there were several holes in the standard, notably that signals did not reach deep into buildings and could not be received on mobile devices. By using the "language" of the Internet, NextGen Broadcast solves those problems. Given that more and more people now use their phones as their primary video device, it's no surprise that NextGen Broadcast has been designed with mobile front and center.

Not only will the new standard improve the TV experience, but it can accommodate more channels and non-TV data services, such as education applications with significant enhancements.

WHAT ARE THE BENEFITS?

Picture Quality - The first major benefit is picture quality. The current ATSC 1.0 standard can support high-definition pictures. The new standard, however, allows for 4K-Ultra High-Definition broadcasts (lots more defining pixels). The new upgrades give us a picture that is so vibrant, it becomes stunningly real.

Audio Quality - The sound you hear from a TV program can dramatically affect the entire experience. The current ATSC 1.0 audio format is limited and cannot provide true "surround sound." ATSC 3.0 adds additional channels placing the listener in the center of a rich theatre-like sound experience.

Importantly, the ATSC 3.0 system also permits multiple audio streams to be broadcast simultaneously to give viewers, for example, the choice of different announcers during a sports broadcast or emergency alerts in multiple languages.

Mobility - In addition to the picture and audio improvements, NextGen Broadcast also makes it possible to watch broadcast video on mobile devices like phones and tablets, as well as in cars. Viewers today have become accustomed to streaming video on all devices. NextGen Broadcast will now add real-time news, information and broadcast sports to that mobile experience. TV – anywhere, anytime.

Targeting - Unlike current TV programming where the same content is broadcast to all devices simultaneously, NextGen Broadcast allows for different programming to be customized or "zoned." For example, separate high school classes or football games might be transmitted simultaneously to different parts of a market. Similarly, an advertiser wanting to reach a select area may only want to target viewers there – think of a Congressional candidate wanting to reach only the voters in their district without wasting money and the time of viewers who can't vote there. This targeting capability is tremendously useful in emergency situations where a weather event may be critical to one part of the market and of little concern elsewhere. This affects a growing issue with "over-alerting," the phenomenon where viewers just tune out when they hear an alert.

Advanced Alerting and Information - The expanded capacity of NextGen broadcasts combined with its pinpoint targeting capabilities will enable more than a simple crawl on the screen warning of a crisis. Now, viewers can see the weather, the Doppler Radar image, the evacuation routes, the shelter locations, and hear it in multiple languages. Similarly, a hazmat spill, school lockdown or AMBER alert can be targeted to specific geographic regions, and viewers can have instant access to critical information. And since the over-the-air broadcast system architecture is based on a "one-to-infinite" capability (where the system can never be overloaded), the system provides a RELIABLE and dramatic enhancement to emergency notifications.

Viewing Experience - Viewers watching video today are dependent on an interactive menu-driven experience that permits them to choose what they are watching and when. The NextGen Broadcast system incorporates that "app" experience by putting those choices in the hands of viewers to select the content. And because the system links over-the-air broadcasting with the Internet, those consumer choices can transparently be delivered through multiple routes without the viewer knowing how the content got there – it's just there.

More than TV: Datacasting - Because the NextGen broadcast channel is simply a giant data pipe with video being just one type of data, the broadcast channel using the NextGen Broadcast capabilities is much more than a video programming experience. Broadcasters can now use the channel for more than just TV service. In fact, part of the channel can now be integrated with other wireless services to provide the "last mile" for 5G services since the broadcast signal is robust and doesn't need the fragile cell phone network to reach all devices in a market. There are multiple new businesses that will be available to serve consumers and other businesses including digital signage support, building and agriculture maintenance, autonomous-driving cars, computer operating system updates, and even the backbone of the Internet of Things. Importantly, the datacasting capability can easily augment distance learning by transmitting entire classroom presentations to all students instantly.

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