

No. 24-1822

IN THE
**United States Court of Appeals
for the Federal Circuit**

CONSTELLATION DESIGNS, LLC,
Plaintiff-Appellee

v.

LG ELECTRONICS INC., LG ELECTRONICS USA, INC., LG
ELECTRONICS ALABAMA, INC.,
Defendants-Appellants

Appeal from the United States District Court for the
Eastern District of Texas in Case No. 2:21-cv-00448-JRG

**CORRECTED BRIEF OF AMICUS CURIAE PEARL TV
IN SUPPORT OF APPELLANT AND REVERSAL**

Gerard J. Waldron
gwaldron@cov.com
José F. Girón
jgiron@cov.com
COVINGTON & BURLING LLP
One CityCenter
850 Tenth Street, N.W.
Washington, D.C. 20001
Phone: (202) 662-5360

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Counsel for Amicus Curiae

**UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT**

CERTIFICATE OF INTEREST

Case Number 24-1822

Short Case Caption Constellation Designs, LLC v. LG Electronics Inc.

Filing Party/Entity Amicus Curiae Pearl TV

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Name: Gerard J. Waldron

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<p>Pearl TV</p>		

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STATEMENT OF IDENTIFICATION

Pearl TV is a business organization of television broadcast companies with a shared interest in exploring and developing forward-looking broadcasting opportunities, including NEXTGEN TV™.

Pearl's membership, comprising more than 768 network-affiliated television stations, consists of nine of the largest broadcast companies in America including: Cox Media Group, the E.W. Scripps Company, Graham Media Group, Hearst Television Inc., Nexstar Media Group, Gray Television, Sinclair Broadcast Group, and TEGNA, Inc. Altogether, Pearl member companies broadcast TV signals to more than 78% of Americans, reaching 331 million residents.

Amicus files this brief pursuant to Rule 29(a) of the Federal Rules of Appellate Procedure. Neither counsel for Appellant nor counsel for Appellee authored this brief, in whole or in part. Neither Appellant nor Appellee nor any third party supplied financial support intended to fund the preparation or submission of this brief. Pearl TV has obtained consent of counsel for Constellation Designs, LLC and LG Electronics, Inc. to submit this amicus brief.

INTRODUCTION

The broadcast television business has experienced major technological transformations since it was first introduced in the United States in the 1920s. Today, we stand in the midst of a transition that is as profound, and arguably more so, than the advent of color television in the 1950s or digital television in the 1990s: NEXTGEN TV™ (also known by the industry standard, “ATSC 3.0”), which blends Internet Protocol (“IP”) technology with “over-the-air” broadcasting.

NEXTGEN TV™, powered by ATSC 3.0, provides enhanced video and audio capabilities that transform the viewing experience. Viewers can enjoy immersive sound with enhanced dialogue clarity and consistent loudness across all programs. The technology also includes improved audio descriptions for the visually impaired, making content more accessible.

With advanced compression technology, NEXTGEN TV™ offers an impressive 500% increase in capacity, allowing for more content delivery options and the ability to receive broadcast signals even while in motion.

NEXTGEN TV™ offers unprecedented capabilities for broadcasters by utilizing broadcast *and* broadband-delivered IP channels. This dual

delivery method allows for expanded content options and the ability to deliver targeted, hyper-local news directly to viewers. By leveraging smart TVs connected to the Internet, broadcasters can provide additional localized and personalized information and interactive features, enhancing the viewing experience. This capability also enables enhanced advertising, delivering ads relevant to the viewer's interests and demographics, thus increasing viewer engagement and the effectiveness of advertising campaigns.

But all this effort by the broadcast industry to deploy NEXTGEN TV™, and by the Federal Communications Commission to approve the standard and guide the industry through the transition, will end in futility if consumers cannot purchase ATSC 3.0-equipped TV receivers. Amicus files this brief in support of LG Electronics (“LG”) because of a deep concern that (a) LG will continue to not sell ATSC 3.0 televisions and (b) other major TV manufacturers will follow LG and pull their products off the market, if the decision on damages from the trial court is allowed to stand.

To assist this Court in seeing the context for this patent dispute in the larger television ecosystem, and the consequences of the decision on

appeal to our country's transition to NEXTGEN TV™, the brief first details the key features of NEXTGEN TV™, which is a giant leap from the digital standard (ATSC 1.0) adopted in the 1990s. It then discusses the patent pool system that has been functioning rather well, both from the perspective of TV-set purchasers and the broadcast industry. The brief then closes with how the damages award to Constellation Designs, which imposes a per-receiver royalty fee for Constellation's patents—*double that of a pool of 11,000 patents*—will hugely disrupt the current functioning patent pool market and could chase away not just LG from the NEXTGEN TV™ receiver market but other manufacturers as well. If there are no NEXTGEN TV™ receivers in the market, then there will be no NEXTGEN TV™ transition in our country.

ARGUMENT

I. NEXTGEN TV™ Is Revolutionizing Broadcast Television.

A. Overview of Broadcasting Television Signals

Television viewing is made possible by a complex ecosystem with distinct roles across many industries. Television networks such as CBS or ABC generate content like a sitcom or an NFL game. Networks then license that content to local stations, which, in turn, produce their own content, like the local news. Next, local stations combine the network

programming and their own content before routing those signals to large antennae called transmitters, which convert those signals into radio waves. The radio waves then travel limited distances to television receivers in the area. (These signals also are received by cable systems, satellite TV distributors, and virtual cable systems and then redistributed as authorized by the broadcaster.) Finally, television sets translate the information received into images and sound.

The system that broadcasters use to transmit the signal has been defined and regulated by the Federal Communications Commission (“FCC”) since the early days of television. Unlike the wireless telephone industry, which can adopt “4G” or “5G” on their own and deploy it at will, the broadcast industry can only transmit on standards approved by the FCC. In addition, because broadcasters are spectrum-constrained, having an allocation of just six megahertz of spectrum (as compared to several times that for a wireless telephone company), the transition must be closely coordinated among broadcast industry players and is overseen by the FCC.

B. Brief History of Broadcasting Standards, and the Development of ATSC 1.0

The FCC regulates the process of broadcasting and transmitting television pursuant to its authority in the Communications Act. 47 U.S.C. § 151 (entrusting the FCC with the authority to regulate “interstate and foreign commerce in communication by wire and radio”). The FCC’s regulatory role is fundamental to all participants in the complex television ecosystem. TV networks capture their content pursuant to that standard; local stations transmit signals using that standard; and TV set manufacturers like LG make television receivers incorporating that standard so that TV sets can translate those signals into viewable content.

Given the highly technical nature of these standards, the FCC often has relied on industry leaders to assist in this effort. In the 1980s, members of the broadcast, broadcast equipment, motion picture, consumer electronics, computer, cable, satellite, and semiconductor industries banded together to form what is now called the Advanced Television Systems Committee (“ATSC”), which had the goal of developing a digital television standard to move the industry beyond the analog standard that had been used for many decades. Leveraging

member expertise, the ATSC proposed standards, known as ATSC 1.0, which the Commission approved in 1996. *Advanced Television Systems and Their Impact Upon the Existing Television Broadcast Service—Fourth Report and Order*, 11 FCC Rcd. 17771 (1996).

The ATSC1.0 standard has been in use since 1996 and is still being used today and operates alongside the more robust ATSC 3.0 standard. While ATSC 1.0 was revolutionary in the 1990s when the world was first “going digital,” it is approaching its thirtieth birthday and is decidedly last century. In the past three decades the Internet as a viewing medium has exploded, the video capabilities offered to consumers on their computers and phones is captivating, and yet hundreds of millions of Americans view broadcast television in much the same way as before Netflix was founded.¹

C. The Future of Broadcast Television: NEXTGEN TV™

The technology undergirding media content creation and distribution has radically changed in the decades since the Commission adopted ATSC 1.0. To leverage these technological improvements, the

¹ Reed Hastings, *How I Did It*, Inc.com (Dec. 1, 2005), <https://www.inc.com/magazine/20051201/qa-hastings.html> (stating that the company was founded in 1997).

ATSC proposed a new set of standards in 2016, and the broadcast industry along with the consumer electronic industry and other stakeholders requested the FCC to adopt this new standard for the television broadcast industry. Joint Petition for Rulemaking of America's Public Television Stations, AWARN Alliance, Consumer Technology Association, and National Association of Broadcasters at 1, GN Docket No. 16-142 (F.C.C. filed Apr. 13, 2016), <https://perma.cc/4SCW-2N9F> (“Joint Petition”).

The proposed standards, collectively referred to as ATSC 3.0 or NEXTGEN TV™, are revolutionizing broadcast television, allowing broadcasters to supply viewers with features long offered by online streaming services like Netflix or Hulu.

With NEXTGEN TV™, image quality improves dramatically. While ATSC 1.0 can achieve only “high-definition” images, NEXTGEN TV™ produces images with four times as many pixels, achieving “ultra-high definition,” or 4K resolution.² As the FCC explained when evaluating NEXTGEN TV™, the new standards would include a wider

² Because Next Gen would support an innovative technology from Dolby Laboratories, audio quality would also improve dramatically.

“color gamut,” a higher “dynamic range,” and higher “frame rates,” resulting in a more “vivid picture.” *In re Authorizing Permissive Use of the “Next Generation” Broadcast Television Standard—Report and Order and Further Notice of Proposed Rulemaking*, 32 FCC Rcd. 9930, 10016 (2017).

NEXTGEN TV™ also merges the capabilities of traditional, over-the-air broadcasting with the “broadband viewing and information delivery methods of the Internet.” *Id.* This merger of an IP-based protocol with over-the-air distribution allows for a more immersive viewing experience. Under ATSC 1.0 (and all its predecessors), broadcast television was a one-way street. Content flowed via radio waves from the creators to the viewers. Because viewers lacked a return path, they could not communicate with broadcasters. The internet of course changed consumers’ expectations on interactivity with content, and the broadcast industry is trying to keep up with those expectations. By incorporating the internet for those viewers with connected TVs, NEXTGEN TV™ can allow viewers to react to broadcast programming in real time. Viewers might, for example, press buttons to guess the answer to a game-show

question even before contestants do, or find additional information on a local station's website about a news story they currently are watching.

NEXTGEN TV™ also leverages internet connections to personalize content. *Id.* at 9934. Thus, ATSC 3.0 TV sets would be capable of alerting viewers of emergencies taking place in their areas without alarming viewers outside the danger zone. *Id.*

Noting the benefits of the new standards, the FCC adopted ATSC 3.0 on November 16, 2017. *Id.* at 9931. Under the FCC's order, broadcasters and TV manufacturers would be able to implement NEXTGEN TV™ on a voluntary basis. *See id.* To enable a smooth transition and to allow time for manufacturing and broadcasting industries and consumers to purchase and deploy the technology, the FCC directed broadcasters to continue to deliver current-generation ATSC 1.0 service to their viewers while at the same time adding ATSC 3.0 and encouraging TV set manufacturers to produce and sell receivers. *See id.*

With the guidance of the FCC, the cooperation among broadcasters, and the production by TV set manufacturers, the transition to NEXTGEN TV™ is proceeding rapidly. Currently, broadcasters are

providing NEXTGEN TV™ signals in markets that contain more than 78% of the U.S. population. Tom Butts, *The Many Moving Parts of the Transition to NextGen TV*, TVTech (June 11, 2024).³ Since rolling out in 2020, more than 10.3 million NEXTGEN TV-compatible sets have been sold. *Id.* By 2025, the Consumer Technology Association estimates that half of the TV sets shipped will be compatible with NEXTGEN TV™, which means that the transition by consumers and broadcasters to ATSC 3.0 is rapidly gaining momentum. Scott Lehane, *ATSC 3.0: Everything You Need to Know About the Broadcast Industry's 'NEXTGEN' Technology Standard*, NextTV, (May 9, 2024).⁴

II. The ATSC 3.0 Patent Pool System Functions Well and Facilitates the Transition to NEXTGEN TV™.

Like many modern technologies, NEXTGEN TV™ depends on the cohesion of many different components. From modulation to encoding, from video to audio, from IT security to television tuners, much of this technology belongs to patent holders. Where a particular technology is

³ <https://www.tvtechnology.com/news/the-many-moving-parts-of-the-transition-to-nextgen-tv>.

⁴ <https://www.nexttv.com/news/atsc-3-0-nextgen-tv>.

critical to NEXTGEN TV™, the owners of the relevant intellectual property rights hold “standard essential patents,” or SEPs.

One challenge to a smooth ecosystem is that these SEPs are not held by one entity or even a small group of entities. Just as there is a large number of SEPs,⁵ so too is there a large number of patent holders. Television receiver manufacturers and broadcasters need to negotiate patent licensing arrangements with patent holders. The transaction costs associated with such licensing are potentially time consuming and expensive with ample opportunities for strategic behavior by the “hold out” patent holder. Most patent holders understand that the value of their patents will increase only if the industry transitions to NEXTGEN TV™—otherwise, they will hold rights in technology that is seldom used and, therefore, less valuable. Moreover, they benefit from reducing transaction costs on of negotiating licensing agreements.

In the context of NEXTGEN TV™, as is common in many modern technologies, a patent pool was created to provide a package of NEXTGEN TV™ patents for a single fee, thus making it highly efficient in terms of time and expense. One patent pool, Avanci Broadcast,

⁵ By amicus’s count, NEXTGEN TV™ depends on more than 1100 SEPs.

licenses 80% of SEPs, those crucial patents on which NEXTGEN TV™ depends. Comments of Pearl TV at 6, *In re Authorizing Permissive Use of the “Next Generation” Broadcast Television Standard*, GN Docket No. 16-142 (F.C.C. filed Sept. 15, 2023), <https://perma.cc/2NTD-GLUG> (citing Avanci Broadcast, <https://www.avanci.com/broadcast/> (last visited Aug. 21, 2024)). Major licensees identified by Avanci include, among others, LG Electronics, Samsung, Sharp, and Sony. See Avanci Broadcast, *supra*. Another patent pool, Via Licensing Alliance, holds 8% of SEPs. Together, then, these two pools allow manufacturers to license close to 90% of the SEPs they need to make NEXTGEN TV™-compatible television sets.

As evidenced above, this patent pool system is working to facilitate the deployment and transition of NEXTGEN TV™. Pearl TV, which is an observer of but not a participant in the consumer electronic business, views the patent pool system for NEXTGEN TV™ as well functioning, and has observed no significant issues or complaints by key members of the ecosystem. Pearl reported its observations about the patent pool recently to the FCC and suggested that additional regulatory oversight

was not needed because the system was functioning as it should be.⁶ Until the *Constellation Designs* decision on appeal here, the patent pool system led to dozens of TV set models being introduced into the market at multiple price points (many well below \$999) and widespread adoption of the NEXTGEN TV™ technology by the broadcast industry. The decision at issue in this case disrupted that functioning market in a manner that greatly concerns the broadcast industry and any person interested in seeing the transition to NEXTGEN TV™ be successful and completed.

III. The Verdict Below Sidelined LG, a Major Manufacturer, and Threatens to Destabilize Patent-Pool Arrangements More Broadly, Stymieing the Critical Transition to NEXTGEN TV™.

In December 2021, Appellee Constellation Designs LLC, a patent holder, sued Appellant LG Electronics (LG), which, at the time, manufactured products compatible with NEXTGEN TV™. Constellation accused LG of infringing four of its patents. *See* Appx43. Following a trial in the Eastern District of Texas, a jury returned a verdict in favor of Constellation Designs, awarding it \$1,684,469.00 U.S. Dollars for past

⁶ Joint Petition at 1.

infringement. Appx84 (Amended Final Judgment). More troublingly, the judgment also ordered LG to pay Constellation Designs *\$6.75 for every future LG TV* that used Constellation's patents. Appx84.

This result immediately halted LG's NEXTGEN TV™ enterprise. To understand how skewed and exorbitant the award is, consider the patent pool rates. The largest patent pool, Avanci Broadcast, charges \$2 to \$3.00 for 11,000 patents, including nine hundred SEPs which are critical to NEXTGEN TV™. Another patent pool charges roughly \$.30, twenty-two times less than Constellation's rate, while offering 90 SEPs, more than twenty-two times the number of SEPs. The jury's verdict on damages is extreme and risks disrupting the entire patent pool market for ATSC 3.0, which otherwise has functioned smoothly for broadcasters, receiver manufacturers, and consumers.

The consumer electronics industry operates with razor-thin margins, and this verdict erased the profitability of NEXTGEN TVs. The evidence on this point is clear: As a direct result of the verdict, LG abandoned its plans to manufacture and sell NEXTGEN TV-compatible products in the United States. Comments of LG Electronics USA Inc. at 4–5, *In re Authorizing Permissive Use of the "Next Generation" Broadcast*

Television Standard, GN Docket No. 16-142 (Sept. 15, 2023), <https://perma.cc/QL4V-RSNZ>; see also Jeff Baumgartner, *LG Halts Production of ATSC 3.0-Compatible TVs Over Patent Concerns*, Light Reading (Sept. 26, 2023), <https://www.lightreading.com/video-broadcast/lg-halts-production-of-atsc-3-0-compatible-tvs-over-patent-concerns>.

The consequences of the judgment may reverberate beyond one manufacturer. The verdict may encourage patent holders to leave patent pools. Instead of negotiating with manufacturers for competitive rates and waiting for their assets to appreciate as NEXTGEN TV™ takes off, some may prefer to charge higher fees now. Doing so would deter manufacturers from making TVs that are compatible with NEXTGEN TV™. And without NEXTGEN TV™-television sets in the market, viewers will not be able access NEXTGEN TV™, nor will broadcasters have any incentive to implement the myriad improvements that the new standards boast.

Thus, the judgment's ripple turns into a cascade. Without compatible TVs, viewers who can enjoy NEXTGEN TV™ vanish, and without viewers to appreciate NEXTGEN TV™, broadcasters abandon

plans to develop NEXTGEN TV™. What is more, innovators may shy away from developing broadcast technology, being aware that their innovations may be frustrated by just a few actors in an industry with thousands of players.

Over the long run, however, the American public will be confined to the same broadcast technology that was cutting edge thirty years ago, while other media (and other countries) move their technology well into the 21st century. And the broadcast industry will be harmed in its ability to participate and compete with other forms of modern media.

CONCLUSION

For the foregoing reasons, this Court should reverse.

Respectfully submitted,

/s/ Gerard J. Waldron

Gerard J. Waldron
gwaldron@cov.com

José F. Girón
jgiron@cov.com

COVINGTON & BURLING LLP
One CityCenter
850 Tenth Street, N.W.
Washington, D.C. 20001
Phone: (202) 662-5360

September 9, 2024

Counsel for Amicus Curiae

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