IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

OPENTV, INC.,	)	
	)	
Plaintiff,	)	
	)	C.A. No. _____
v.	)	
	)	**JURY TRIAL DEMANDED**
PINTEREST, INC.,	)	
	)	
Defendant.	)	

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff OpenTV, Inc. ("Plaintiff" or "OpenTV"), by its attorneys, for its Complaint of patent infringement ("Complaint") against Defendant Pinterest, Inc. ("Defendant" or "Pinterest"), hereby alleges as follows:

INTRODUCTION

1. OpenTV brings an action for patent infringement under the Patent Laws of the United States, 35 U.S.C. § 1, *et seq.*, to stop Pinterest from continuing its wrongful and unlicensed use of OpenTV's patented technologies for, among other things, storing, providing, managing, delivering, securing, playing, and viewing video content on smartphones, tablets, computers, and other devices.

2. Plaintiff and its affiliates have a long and distinguished history of innovation, and today these companies design and manufacture widely used, critically acclaimed, and award-winning digital media technologies, employ hundreds of employees in the United States and worldwide, and protect their research and development investment with a robust patent portfolio comprising thousands of patents reflecting the years of innovation and effort by numerous inventors and engineers. Plaintiff and its affiliates encourage innovation by licensing their

intellectual property portfolio, but enforce their patent rights when necessary to protect their research investment and protect the fruits of the efforts of their employees from unauthorized use.

3. Pinterest's products and services, including, without limitation, its website, www.pinterest.com, and its mobile application, make pervasive use of OpenTV's patented technology and infringe U.S. Patent No. 12,231,703 (the "'703 patent") (Ex. A).

4. Plaintiff seeks damages in an amount adequate to compensate it for Pinterest's infringement, a permanent injunction barring Pinterest from continuing to infringe OpenTV's patent, and attorneys' fees and costs associated with this action.

THE PARTIES

5. Plaintiff OpenTV, Inc. is a Delaware corporation whose principal place of business in the United States is located at 5090 North 40th Street, Suite 450, Phoenix, Arizona 85018.

6. Defendant Pinterest, Inc. is a Delaware corporation with a principal place of business at 651 Brannan Street, San Francisco, California 94107.

JURISDICTION AND VENUE

7. OpenTV brings this action for patent infringement under the Patent Laws of the United States, 35 U.S.C. § 1, *et seq.*

8. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

9. This Court has both general and specific jurisdiction over Pinterest because Pinterest is incorporated in Delaware. In addition, Pinterest has committed acts within this District giving rise to this action and has established minimum contacts with this forum such that the exercise of jurisdiction over Pinterest would not offend traditional notions of fair play and substantial justice. Pinterest, directly and indirectly (through vendors, service providers,

customers, end users, and others), has committed and continues to commit acts of patent infringement in this District, by, among other things, providing, making, using, testing, selling, and/or licensing products and services that infringe the '703 patent. Pinterest has purposefully directed activities at the residents of this District, and by placing the accused instrumentalities into the stream of commerce with knowledge and intent that they would be accessed, downloaded, and/or used in this District.

10. Venue is proper in this District pursuant to 28 U.S.C. §§ 1391(b) and (c) and 1400(b). Pinterest is incorporated in Delaware and therefore resides in this District.

FACTUAL BACKGROUND

I. OpenTV

11. OpenTV, and the other subsidiaries of Kudelski SA, a Swiss corporation with shares publicly traded on the SIX Swiss Exchange, make up the various companies of The Kudelski Group. The history of The Kudelski Group is one highlighted by over 70 years of innovation, award winning products, and loyal, long-term customers who entrust The Kudelski Group with their business. Today, The Kudelski Group has employees in the United States, Europe, Asia, and elsewhere, providing jobs in manufacturing, engineering, research and development, marketing, sales, and many other specialties, with over 1,700 employees worldwide. On information and belief, The Kudelski Group maintains international headquarters in Cheseaux-sur-Lausanne, Switzerland and its U.S. headquarters in Phoenix, Arizona.

12. In 1951, Stefan Kudelski created the first company in what became The Kudelski Group and launched the now legendary "Nagra" line of portable recording devices for cinema, TV and radio recording. In 1952, a Nagra recording device was used to record an excursion to the heights of Mount Everest. Then, in 1960, a Nagra recording device was used in the exploration of

the depths of ocean (specifically, The Challenger Deep) in the famous Trieste voyage (35,814 feet deep). Stefan Kudelski's recording devices, and the inventions in them, were considered revolutionary throughout the movie industry. The NAGRA III, a cinema recorder produced in 1958, began Mr. Kudelski's 20-year journey recording most Hollywood productions.[1] The Nagra devices allowed precise synchronization of audio tape with film, providing filmmakers with studio sound quality during on-location filming. And in the mid to late 1960s, Nagra recorders were used by the United States government for intelligence operations and by NASA during its Apollo mission to the moon.

13. Throughout his career, Mr. Kudelski received numerous awards and honors for his technological achievements. For example, Mr. Kudelski received four Oscars from the Academy of Motion Picture Arts and Sciences: three Scientific or Technical Awards in 1965, 1977, 1978, and the Gordon E. Sawyer Award in 1990. Mr. Kudelski also received two Emmy Awards, as well as Gold Medals from L. Warner, Audio Engineering Society, Lyra and Eurotechnica. Mr. Kudelski was also recognized by the FBI for his technology contribution in audio recording.

14. Over the next 50 years, The Kudelski Group transformed and grew its business to include encryption systems for television (1989), digital TV access solutions (1995), public access solutions (2001), pay-TV software (2009), cybersecurity (2012), artificial intelligence and big data (2016), and Internet-of-Things (2017).

15. The success of its products allowed The Kudelski Group to expand its technology into the digital television domain.

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[1] *See* Company, NagraVision Kudelski Group (November 4, 2024), https://dtv.nagra.com/why-nagra (quoting Academy Award-Winning Sound Engineer, Chris Newman: "There was virtually no film made from 1961 until the early '90s that did not use the NAGRA") (last accessed November 18, 2025).

16. As part of its NagraVision division, The Kudelski Group has developed technologies to help global service providers deliver digital entertainment to consumers. The Kudelski Group's technology and intellectual property has been integrated and recognized by the world's leading technology companies such as Apple, Bloomberg, Google, the Walt Disney Company, Cisco, Hulu, Netflix, Verizon, and Yahoo.

17. In 1989, The Kudelski Group launched its first conditional access system for pay TV. Over the next decade, The Kudelski Group continued to expand its technology development in the digital TV space, providing global, universally compatible solutions to manage, organize, enhance, market, and secure digital content, regardless of whether it was transmitted over managed or unmanaged networks and broadcasted linearly or on-demand.

18. Today, digital media is one of the core businesses of The Kudelski Group. With that business priority, The Kudelski Group has become a world leader in digital security and convergent media solutions for the delivery of digital and interactive content. The Kudelski Group's innovations are continuously contributing to the evolution of the entire digital ecosystem, enabling operators to extend their multimedia offerings across the entire digital ecosystem to numerous client devices through traditional managed networks as well as Internet delivery.

19. The Kudelski Group has also grown as a leader in the digital media domain through acquisitions of pioneering technology companies, including such notable companies as Lysis (2001), Livewire (2001), MediaGuard (2004), SmarDTV (2006), OpenTV (2007), and Conax (2014).

20. OpenTV was founded in 1996 as Thomson Sun Interactive, LLC, a joint venture of Thomson Multimedia SA and Sun Microsystems, Inc. In 1997, Thomson Sun Interactive LLC was converted into a newly-formed corporation, OpenTV. From its inception, OpenTV has been

dedicated to developing and commercializing cutting-edge, patented technology required for the delivery of television and other media content to consumers through cable, satellite, and terrestrial networks, and other managed and unmanaged networks.

21. OpenTV has a long history of innovation in the field of software for set-top boxes for television sets. Within four years of its creation, OpenTV became the first interactive television middleware provider to integrate its middleware technology into more than 10 million set-top boxes worldwide, more than all other industry competitors combined. OpenTV also partnered with EchoStar's DISH Network, which was the first satellite company to provide interactive television services in the United States. OpenTV's set-top box middleware technologies were key to the successful growth of DISH Network. Today, OpenTV's software is used by companies around the world.

22. In addition to its industry-leading pay TV software solutions, OpenTV has been an innovator in web-based content delivery.

23. As a result of its ongoing commitment to interactive television and web-based content delivery, by 2004-2006, OpenTV led the industry in integrating browser software into television sets, built the first interactive shopping application for DISH Network, successfully launched real-time two-way interactive television shopping services on QVC, and provided the technology for CNN Enhanced TV, among other notable achievements. All of these innovations helped pave the way for the growing revolution in how media content is delivered and enjoyed, including over the Internet.

24. In addition to these achievements, OpenTV also developed complementary technology related, for example, to personal video recording ("PVR"), video-on-demand ("VOD"), television home networking, advanced advertising methodologies, and tools for

recommending content to viewers. The industry has also long recognized OpenTV's technology contributions. For example, OpenTV's PVR was named as one of the best in its field by Seagate Technology in 2009.

25. Today, OpenTV develops software that enables intuitive and personalized viewing experiences for consumers. OpenTV's software solutions provide a variety of advanced and interactive services for digital media, including advanced user interfaces, VOD, PVR, high-definition ("HD"), interactive, and addressable advertising, and a variety of enhanced television applications.

26. The Kudelski Group products that are integrated with the OpenTV platform have won numerous industry awards, including "Best New Technology" at the 2009 DISH Network Interactive Awards for OpenTV, a TV Innovation Award in the category of "Advanced User Interface" for OpenTV's cross-device user experience in 2010, an IPTV World Forum Award for "Best Multiscreen Solution/Service" for Nagra Multiscreen in 2012, and "Best IPTV Technology" for Nagra MediaLive and "Best Middleware" for OpenTV at IBC 2012. OpenTV's next generation middleware software, known as OpenTV5, was widely praised following the 2013 International Broadcasting Convention trade show as a stand-out product for showing "how the user interface and the overall user experience can be enhanced with 4K screens," "bring[ing] the HTML5 user experience and 4K to a new level," and for providing a "stunning" and "compelling" user interface.

27. OpenTV became a part of The Kudelski Group in 2007 through The Kudelski Group's acquisition of a controlling stake in the company. OpenTV is now a wholly-owned subsidiary of Kudelski Corporate, Inc., which is a wholly-owned subsidiary of Kudelski SA.

28. The Kudelski Group devotes substantial resources to research and development, with nearly 800 employees engaged in engineering worldwide. In fact, The Kudelski Group companies have invested over $3 billion in research and development in the past 20 years.

29. To protect their investment in research and development, OpenTV and The Kudelski Group companies have garnered a robust international portfolio of over 3,000 worldwide pending and issued patents, including many related to the delivery of end-to-end secure media solutions for digital content, and continue to substantially grow their worldwide patent positions in this and other complementary technology areas.

30. These patents include key technologies related to content management and delivery systems, content recommendation engines and targeted content delivery, subscriber management systems and tools, Digital Rights Management ("DRM") and other content access control techniques, billing and payment systems, user interfaces, digital video recorder ("DVR") content storage and scheduling, end-to-end digital content security, including securing digital content within the home network, VOD content selection, advanced advertising techniques, and many others.

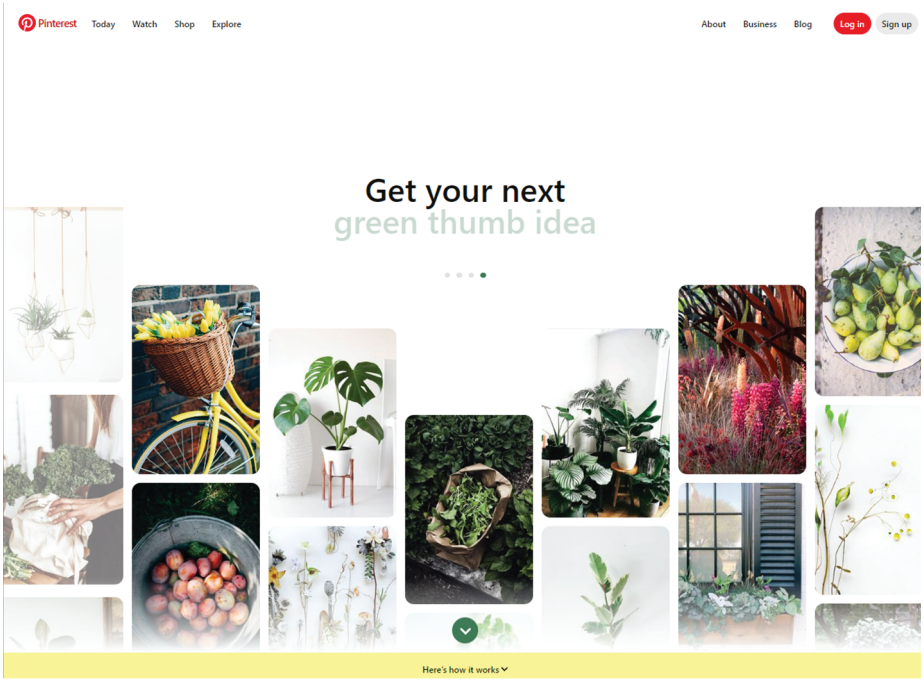
31. Companies worldwide have acknowledged the commercial importance of The Kudelski Group's patent portfolio, taking licenses to OpenTV's patents and/or other patents of The Kudelski Group relevant to their businesses.

32. With the proliferation of video-based content and advanced advertising techniques on social media platforms such as Pinterest, Kudelski's inventions are now used to, for example, optimize content recommendation systems, enhance video streaming applications, and provide curated advertising recommendation and delivery functionality.

II. Pinterest

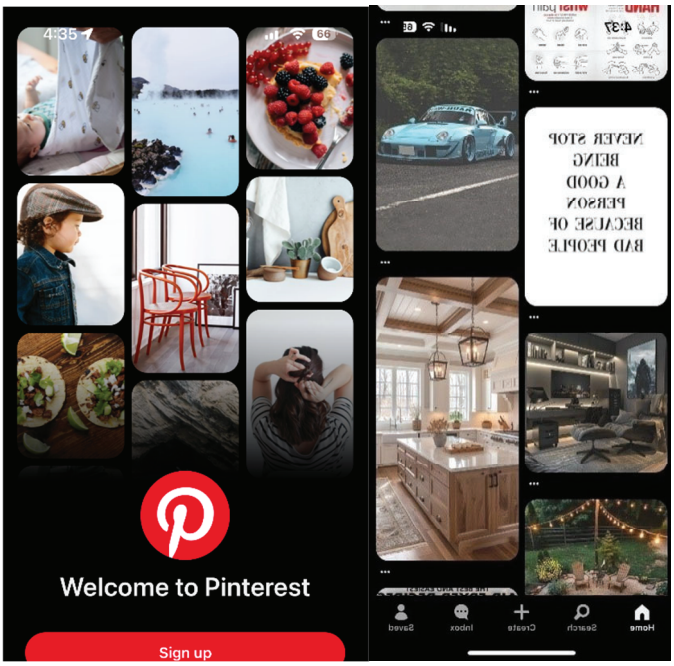
33. Pinterest is a Delaware corporation with a principal place of business in San Francisco, California.

34. Pinterest is a "visual discovery engine for finding ideas."[2] Pinterest can be accessed by either a web browser at www.pinterest.com, (the "Website"):



or as a mobile application called "Pinterest" that can be installed on iOS, Android and Windows mobile devices, (the "Mobile App").[3]

[2] Pinterest, "What is Pinterest," https://help.pinterest.com/en/guide/all-about-pinterest, (last accessed November 18, 2025).
[3] Pinterest, "Upgrade the Pinterest app," https://help.pinterest.com/en/article/use-pinterest-in-a-mobile-browser, (last accessed November 18, 2025).



35. Pinterest presents digital visual content, including video content, which Pinterest describes as a "Pin." Pinterest allows individuals and groups to organize their desired Pins into various "Boards." Pinterest's Website and Mobile App contain a "home feed" where users "find Pins, people and business [Pinterest] think[s] [users] will love, based on [users'] recent activity."[4] Pinterest also claims to "show [users] Pins from the people and boards [users] choose to follow."[5]

A. The Importance of Video to Pinterest's Platform

36. According to Pinterest engineers, "Pinterest is one of the most image-heavy services online, and so it's crucial that [Pinterest] constantly work to improve the speed and quality of those images whether static, GIF or video."[6] Pinterest built its native video platform in or around

[4] Pinterest, "What is Pinterest", https://help.pinterest.com/en/guide/all-about-pinterest, (last accessed November 18, 2025).
[5] *Id.*
[6] Pinterest Engineering, "Improving GIF performance on Pinterest," Medium, https://medium.com/pinterest-engineering/improving-gif-performance-on-pinterest-8dad74bf92f1 (last accessed November 18, 2025).

2016.[7] In addition to providing a platform for videos, Pinterest began converging GIFs to videos to improve user experience and engagement.[8]

37. In September of 2020, Pinterest introduced a concept known as story pins, allowing pinners to use videos to tell dynamic and visual stories.[9] In or around 2021, the concept of story pins evolved into Pinterest idea pins, providing pinners with a suite of new publishing tools including, video-first features.

38. Video Pins were necessary for Pinterest to remain a viable competitor in the social media market. "In July of 2021, Pinterest saw a 5% decrease in users . . . [which t]hey attributed to . . . people spending less time at home after the Covid restrictions started easing up."[10] Pinterest determined that "[v]ideo [was] a necessary element in the idea pins . . . because of the consumer demand for short form video introduced by TikTok and adapted by Instagram, Snapchat, and YouTube."[11] According to one source, Pinterest's "move [to short-form video] allows Pinterest to keep up with other short-video heavy hitters such as TikTok, Instagram Reels, YouTube Shorts, and Snapchat."[12]

39. Pinterest's CEO and co-founder, Ben Silbermann, related the success of launching video on the platform to the company's increasing profitability: "We took important steps in 2021 with the launch of our foundational technology to deliver a video-first publishing platform. And,

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[7] *Id.*
[8] *Id.*
[9] Pinterest Newsroom, "Introducing Story Pins and new ways for creators to build and grow with Pinterest," https://newsroom-archive.pinterest.com/introducing-new-ways-for-creators-to-build-and-grow-with-pinterest, (last accessed November 18, 2025).
[10] "Short-Form Video and Pinterest – How Did it Change the Platform," Teaching Social Media, September 13, 2022, https://teachingsocialmedia.org/2022/09/13/short-form-video-and-pinterest-how-did-it-change-the-platform/, (last accessed November 18, 2025).
[11] *Id.*
[12] *Id.*

I'm proud to say that for the first time, we surpassed $2 billion in revenue for the year — growing 52% over the previous year — and reached our first full year of GAAP profitability."[13]

40. Pinterest also found that Video Pins enhanced the user experience. Specifically, Pinterest marketing consultants explain that Video Pins create an immersive experience that keeps users engaged for longer periods of time than static images, which strengthens Pinterest's value as an inspiration-based discovery platform. Video Pins are widely viewed, saved, and shared, converting viewers into active participants in the discovery process, thus making Video Pins crucial to Pinterest's user experience. According to Pinterest, "video content . . . not only grabs . . . users' attention but takes them from inspiration to action."[14] Pinterest further notes that users "view videos mindfully, scrolling three times slower than they do on other social platforms," causing videos to "play[] a critical role" in converting users to buyers.[15] "When viewers are captivated by the videos they see and watch them until the end, they're more likely to remember your brand and take action, transforming viewers into potential customers."[16] Pinterest avers that Video Pins enhance the user experience. "In fact, 66% of Pinners [Pinterest's term to describe its users] say that videos add to their discovery experience more significantly than videos on other

[13] Pinterest Announces Fourth Quarter and Full Year 2022 Results, BusinessWire, February 03, 2022, https://www.businesswire.com/news/home/20220203005895/en/Pinterest-Announces-Fourth-Quarter-and-Full-Year-2021-Results, (last accessed November 18, 2025).
[14] Tretera, Sibylle, "Tap into high-intent shoppers with video ads on Pinterest," Pinterest Business, Nov. 30, 2023, https://business.pinterest.com/en-gb/blog/video-ads-pinterest-high-intent-shoppers, (last accessed November 18, 2025).
[15] *Id.*
[16] *Id.*

media platforms."[17] "Pinners are also 54% more likely to say that videos on Pinterest inspire them to take action."[18]

41. To support the creation and enablement of Video Pins on the Pinterest platform, Pinterest provides online help to users for uploading video content and creating video Pins[19]:

Create a video Pin

1. Log in to your Pinterest account.
2. Click **Create** at the top-left of your screen.
   - If you have a business account, select ☰. Under **Create**, select **Create Pin.**
3. Click ⬆ to select a video from your computer (or drag and drop into the upload window).
   - You can select up to 10 videos. Each video will create a new Pin.
   - To combine multiple images and videos in one video Pin, create a Pin with the Pinterest app.

42. Pinterest has leveraged the enhanced user experience of Video Pins to grow its advertising revenue with its commercial customers. Pinterest instructs its users on how to create and configure video ads.[20] Pinterest offers a sophisticated suite of video advertising options:[21]

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[17] Pinterest Newsroom, "Mastering the art of inspirational videos on Pinterest, https://newsroom-archive.pinterest.com/en-gb/mastering-the-art-of-inspirational-videos-on-pinterest, (last accessed on November 18, 2025).
[18] *Id.*
[19] Help Center, Pinterest, "Create a Pin from an image or video," https://help.pinterest.com/en/article/create-a-pin-from-an-image-or-video, (last accessed November 18, 2025).
[20] Pinterest Business, "Video ads", https://help.pinterest.com/en/business/article/promoted-video-with-autoplay, (last accessed November 18, 2025).
[21] Tretera, Sibylle, "Tap into high-intent shoppers with video ads on Pinterest," Pinterest Business, Nov. 30, 2023, https://business.pinterest.com/en-gb/blog/video-ads-pinterest-high-intent-shoppers/, (November 18, 2025).

Your ads work harder here

Pinterest's suite of full-funnel video ads is designed to cater to every stage of the purchase journey, no matter your objectives. Whether aiming to drive brand lift in the upper funnel or achieve conversions in the lower funnel, there's a video solution to match.

- **Video ads:** Available in two formats: standard, which is the same size as a vertical Pin, and max-width, which covers the full width of the Pinterest mobile feed. These eye-catching videos are designed to grab attention as people scroll their feed, making them ideal for driving both awareness and consideration.
- **Idea ads:** Dive into the world of mobile-first native storytelling. With an array of creative and interactive features at your disposal, you can either take the reins or collaborate with a creator to craft a compelling narrative via our paid partnership tool.
- **Premiere Spotlight:** Want to make a splash at the moments that matter most for your brand? By using Premiere Spotlight, our newest high-impact awareness offering designed to reach Pinners at scale, brands observed a staggering 8.2x surge in Aided Brand Awareness.[6]
- **Video shopping ads:** Currently in beta, merchants have the opportunity to include a video clip in their product catalogue and promote the product as an ad.[7]

43. According to Pinterest, "advertisers leveraging at least two video formats saw a notable increase in various brand metrics, from a 1.4x uplift in brand awareness and favorability to a 1.2x boost in brand recall and action intent."[22] Accordingly, Video Pins play a crucial role in Pinterest's success as an advertising platform.

44. By incorporating Video Pins, Pinterest has been able to remain a viable competitor as a social media platform. Pinterest has further been able to increase its value through enhanced experiences for its users on one hand, and more effective advertising for its commercial customers on the other.

[22] *Id.*

45. Video Pins form an integral component of Pinterest's content ecosystem and operate consistently with the platform's broader "discovery" framework. Video Pins appear within both the Home Feed and search results, where they are prominently displayed to encourage engagement. Pinterest's documentation notes that such Video Pins are configured for automatic playback within a user's feed. On mobile devices, a Video Pin typically begins playback when approximately fifty percent (50%) of its display area becomes visible on the screen. When a user taps the Video Pin, a larger viewing interface opens, enabling audio playback when available. Pinterest specifies this trigger threshold and the related option to disable autoplay in its official help materials, which describe the operation and user settings of the autoplay functionality in detail.[23]

46. Pinterest's platform infrastructure is designed to support and process standardized video file formats and codecs widely used in digital content delivery. Pinterest's technical specifications identify accepted container formats, including files with the extensions .MP4, .MOV, and .M4V, as well as video content encoded using the H.264 (Advanced Video Coding, AVC) and H.265 (High Efficiency Video Coding, HEVC) standards. These formats and encoding protocols are routinely received, uploaded, and processed within Pinterest's content management and playback systems, thereby enabling seamless integration and display of Video Pins across the platform's web and mobile applications.[24]

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[23] Pinterest, "Manage video autoplay settings," https://help.pinterest.com/en/article/video-on-pinterest, (last accessed November 18, 2025).
[24] Pinterest, "Review Pin specs," https://help.pinterest.com/en/article/review-pin-specs, (last accessed November 18, 2025); Pinterest, "Review ad specs," https://help.pinterest.com/en/business/article/pinterest-product-specs, (last accessed November 18, 2025).

B. Pinterest's Use of Adaptive Bitrate Streaming

47. Pinterest engineers acknowledge that engagement with video is significantly impacting how fast the client platform performs.[25] According to Pinterest, a three second delay can cost a 13 percent decrease in views.

48. To mitigate problems with poor video quality and experience, Pinterest indicates that it uses adaptive bitrate streaming protocols (or "ABR") including HTTP Live Streaming ("HLS") and Dynamic Adaptive Streaming over HTTP ("MPEG-DASH").[26] As described by Pinterest, these technologies work by encoding a source file into multiple streams with different bitrates. Then those streams split into smaller segments with similar duration times. The video player then seamlessly switches between the streams depending on the available bandwidth and other factors. This allows the video to still play (at a lower quality) when the signal is poor and jump to the higher quality stream when the signal strengthens.[27] Pinterest's incorporation of ABR (and its associated HLS and MPEG-DASH technology) are referred to herein as "Pinterest ABR."

49. According to Pinterest, as of August 2024, HLS accounts for approximately 70% of video playback sessions on iOS apps, and MPEG-DASH accounts for around 55% of video sessions on Android.[28] Pinterest indicates that MPEG-DASH is supported by Android's ExoPlayer.[29] Pinterest indicates that HLS is supported through iOS's AVPlayer.

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[25] Pinterest Engineering, "Optimizing video playback performance," Medium, https://medium.com/pinterest-engineering/optimizing-video-playback-performance-caf55ce310d1, (last accessed November 18, 2025).
[26] *Id.*
[27] *Id.*
[28] Pinterest Engineering, "Improving ABR Video Performance at Pinterest," Medium, https://medium.com/pinterest-engineering/improving-abr-video-performance-at-pinterest-f0ea47a6d4fc (last accessed November 18, 2025).
[29] *Id.*

Playtime is Never Over

Improving the performance of video playback is a never-ending investigation into the inner-workings of the ExoPlayer library as well as our own product's distinct use-cases, but what's the most challenging is building an architecture that works for the uniquely Pinterest experience of the home feed. Our long-term goal is to share this work to other developers looking to build a seamless video UX with minimal setup required. In the meantime, we hope everyone builds a more performant video experience.

To learn more about engineering at Pinterest, check out the rest of our Engineering Blog and visit our Pinterest Labs site. To explore life at Pinterest, visit our Careers page.

50. Pinterest utilizes ABR for delivering video content to its users.[30] Pinterest describes how this method involves encoding the content at multiple bitrates and resolutions, resulting in several rendition versions of the same video. Then during playback, players (*e.g.*, ExoPlayer and AVPlayer) enhance the user experience by selecting the best possible quality and dynamically adjusting it based on network conditions.[31]

51. Pinterest employs ExoPlayer, an extensible media player framework developed by Google and distributed through the Media3 library, as the primary video playback engine for its Android application. ExoPlayer supports adaptive bitrate streaming protocols, including MPEG-DASH and HLS, and is capable of reusing audio and video decoders during content transitions to improve playback continuity and efficiency. Pinterest's own engineering publications confirm the company's reliance on ExoPlayer for its Android video implementation and describe various performance optimizations undertaken by Pinterest's engineers—such as ABR improvements,

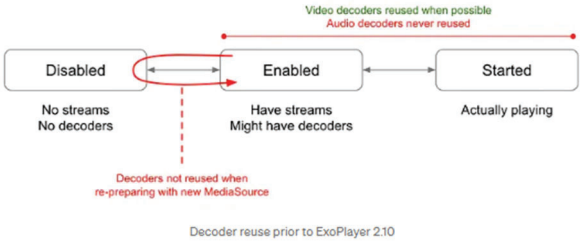
[30] *Id.*
[31] *Id.*

manifest file handling, and decoder management techniques—to enhance startup latency and streaming quality during video playback and transitions between pieces of content.[32]

C. Optimization of the Pinterest Media Player Through Reuse of the Playback Pipeline

52. Pinterest has optimized the performance of its media players, including for the Pinterest Android application, through the reuse of elements of the playback pipeline, including the reuse of audio and/or video decoders as, for example, a user scrolls through a feed that includes video Pins.

53. ExoPlayer version 2.10 for the first time implemented the ability to reuse audio decoders across video streams and more broadly allowed the reuse of video decoders beyond simply transitioning from one piece of media to the next in a playlist.[33] Prior to ExoPlayer version 2.10, video decoders were reused only in narrow circumstances and audio decoders were never reused for two streams of media:



Prior to 2.10, ExoPlayer would reuse video decoders when possible for as long as the video renderer remained in the enabled and started states. In particular, this meant that video decoders would be reused when transitioning from one piece of media to the next in a playlist. Audio decoders were not reused across such playlist transitions, and neither video or audio decoders were reused when renderers transitioned through the disabled state. Importantly, re-preparing the player to play a different MediaSource causes this type of state transition, and therefore decoders were not reused in this case.

Id.

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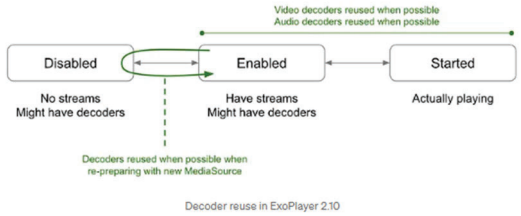
[32] *Id.*

[33] Olly Woodman, Improved decoder reuse in ExoPlayer, Medium, https://medium.com/google-exoplayer/improved-decoder-reuse-in-exoplayer-ef4c6d99591d (last accessed November 18, 2025).

54. With the introduction of ExoPlayer 2.10, audio decoder reuse was enabled across different streams. In addition, reuse of video decoders was made possible beyond, for example, a playlist:

Improved decoder reuse in 2.10

In ExoPlayer 2.10 we've made changes that enable audio decoders to be reused. We've also enabled decoder reuse when re-preparing the player to play a different MediaSource, by allowing renderers to hold decoders when transitioning through the disabled state. These changes are summarized in the diagram below.

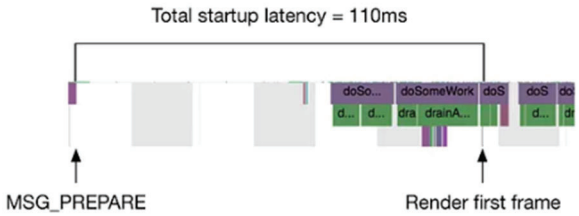


Enabling audio decoders to be reused reduces the amount of work that the player has to do when transitioning from one piece of media to the next in a playlist, reducing the probability of frame drops when transitions occur.

Id.

55. By enabling the reuse of audio decoders and more widely the reuse of video decoders, an AndroidX Media3 blog post explains that "playback startup latency can be reduced if the player is able to reuse decoders when re-preparing the player to play a different MediaSource." *Id.* The same blog post explains that by eliminating the need to setup decoders, startup latency is reduced by nearly 40% (from 280ms to 110ms):

More significantly, playback startup latency can be reduced if the player is able to reuse decoders when re-preparing the player to play a different MediaSource. The systrace below shows an example where the player is being re-prepared with the same video used in the previous example. By eliminating the need to setup the decoders, startup latency is reduced from 280ms to 110ms.



Id.

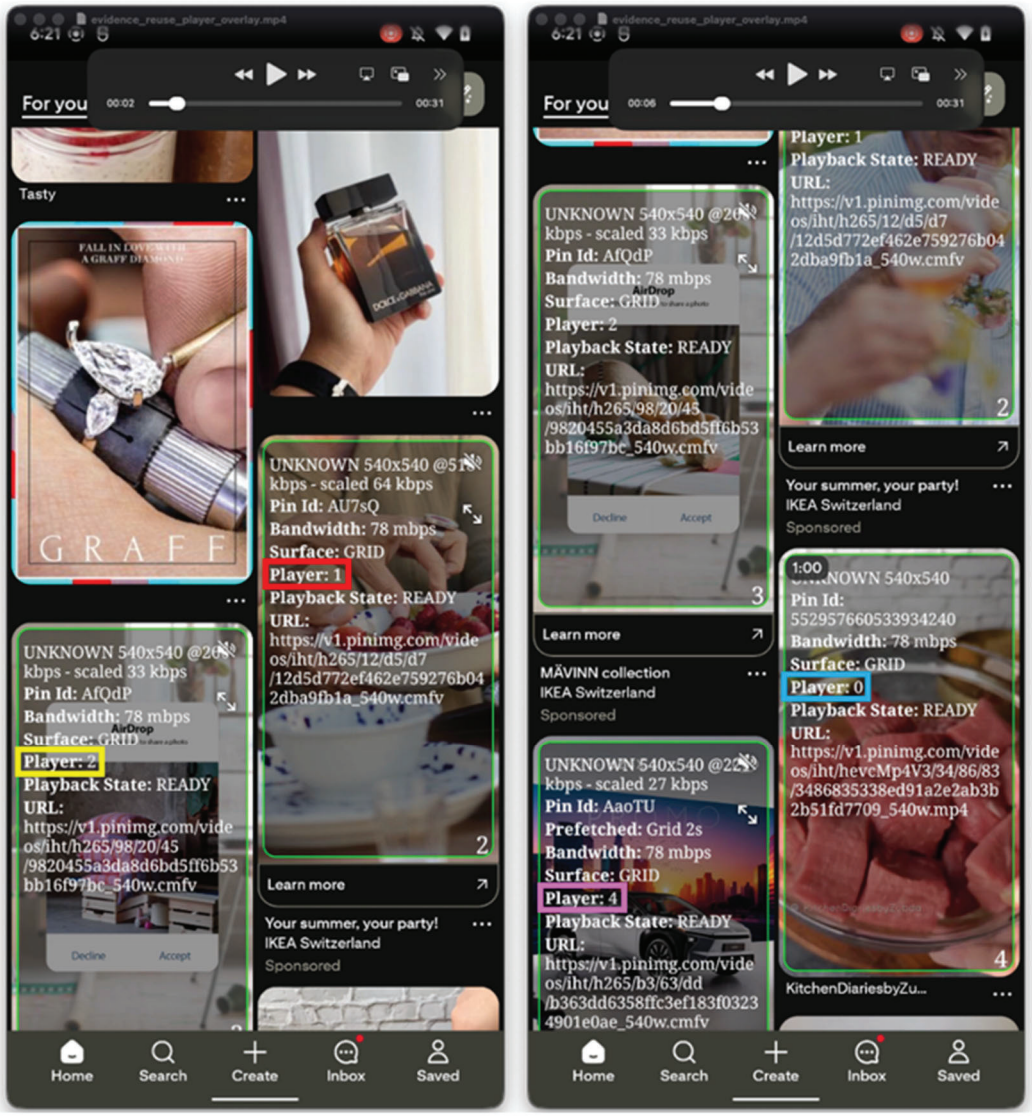
56. To benefit from the reuse of audio decoders and video decoders, applications, such as the Pinterest Android application, must, *inter alia*, "use a single ExoPlayer instance for all playbacks, rather than instantiating a new instance each time. This is because decoders are only reused within an ExoPlayer instance, not between them." *Id.*

57. Based on information and belief, Pinterest implements audio and video decoder reuse as implemented in ExoPlayer version 2.10 and later.

58. Consistent with the open-source implementation of ExoPlayer, the Pinterest Android application employs internally managed "player instances" to facilitate the playback of Video Pins. Each player instance is assigned a unique numerical identifier (a "player ID") that enables the system to track and manage specific playback sessions within the application. Although these player instances operate transparently to the end user—who merely experiences seamless video playback, such as through the autoplay functionality described above—the underlying application architecture differentiates and records each playback instance internally.

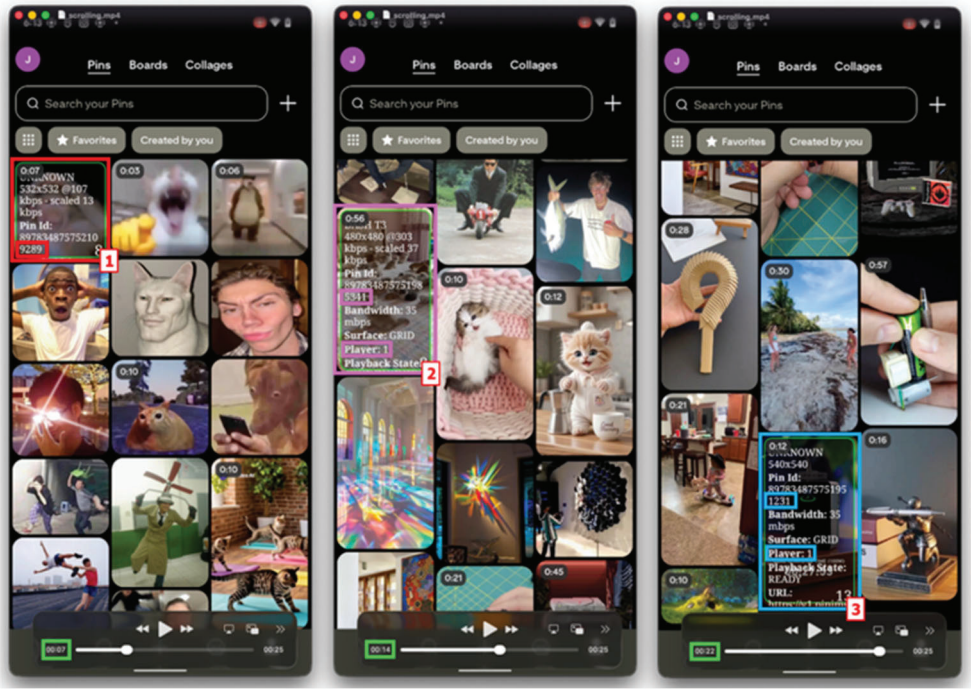
59. The operation and (re)use of player instances and their corresponding player IDs within the Pinterest Android application can be observed and verified through the app's debug mode.

60. When the Pinterest Android application operates in debug mode and a user scrolls through the feed, the interface displays the individual player instances together with their assigned player IDs—for example, "Player 0" (pink), "Player 1" (red), "Player 2" (yellow), and "Player 4" (blue). As reflected in the captured screenshots, these color-coded identifiers visually correspond to the active playback components associated with each video Pin. The colored borders surrounding the video Pins indicate the player instance currently engaged in decoding and rendering the video content.



61. When the Pinterest Android application automatically initiates playback of a subsequent video Pin of the same content type—for example, a clip encoded within the same streaming or codec class—the system does not instantiate a new player. Instead, it continues playback using a previously initialized player instance identified by the same player ID. This demonstrates that the Pinterest application reuses the same player instance, rather than re-creating a new playback pipeline for each successive video, thereby practicing the process described in the patent-in-suit involving the recycling of playback pipeline components when transitioning between video items of the same format.

62. The below screenshots captured while operating the Pinterest Android application in debug mode demonstrate the reuse of a player instance—specifically, the instance identified as Player ID 1. Starting from left to right, the series of screenshots below were taken as a user scrolls through their feed. As evidenced by the middle screenshot, the second video Pin (labeled **[2]** and highlighted in pink in the accompanying screenshot) is played through the application's autoplay function using Player Instance 1. As evidenced by the right-most screen shot, once the user scrolls away from the second video Pin and to the third video Pin, the third Pin (labeled **[3]** and highlighted in blue in the accompanying screenshot) is played through the application's autoplay function again using Player Instance 1:



63. The use of identical player IDs across multiple, sequentially played videos of similar content type demonstrates that the Pinterest application preserves essential components of the playback pipeline during these transitions thereby optimizing the playback experience for users and reducing playback startup latency for Video Pins.

NOTICE

64. Pinterest and The Kudelski Group entities, including OpenTV, have engaged in licensing discussions for nearly four years. OpenTV, through The Kudelski Group, first informed Pinterest of its need to take a license to OpenTV's patents as early as November 2020.

65. Pinterest has been on notice of infringement of the '703 patent since at least service of this Complaint.

OPENTV'S '703 PATENT

66. OpenTV is the owner of all right, title, and interest in the '703 patent.

67. The '703 patent, entitled "Bitrate and Pipeline Preservation for Content Presentation," was duly and legally issued on February 18, 2025, and filed on October 4, 2023, with Amarendra N. Gogoi, Sanjay Kumar Gupta, and Ravikant Swami as named inventors.

68. The patent addresses the technical field of optimizing content changes during media playback: "The present disclosure generally relates to machines … that optimizes a content change process (e.g., channel change) … [and] addresses systems and methods for preserving a download bitrate and a content playback pipeline during a content change process." '703 patent at 1:15-25.

69. The patent identifies concrete deficiencies in prior systems and describes how "[c]onventionally, during a switch in content (e.g., caused by a channel change or a selection of a different piece of content), a delay occurs as certain information is obtained before the new piece of content (e.g., program, movie, show) is rendered and displayed. Additionally, for adaptive bitrate streaming content, the content typically starts streaming or download at a low (or lowest) bitrate before slowly increasing in bitrate until an optimum bitrate is achieved. This results in initial video or images being grainy. Furthermore, the delay may be increased by a need to build a content playback pipeline each time a change in content occurs." *Id.*, 1:30-40.

70. The inventions described in the ’703 patent are directed to solving the technical problem of “optimizing content change (e.g., reducing time for a change in channel or loading of new content) regardless of the delivery channel—whether the content is broadcast (e.g., IPTV and multicast) or over-the-top (OTT).” *Id.*, 3:2-5. The patent addresses the need to reduce latency during content transitions while maintaining high initial image quality, and to preserve system resources by avoiding unnecessary reconstruction of playback pipelines.

71. In one example embodiment, the ’703 patent describes a digital receiver system that operates to optimize content switching through a combination of bitrate preservation and pipeline component management. The digital receiver comprises several components that work together to achieve the invention’s objectives. *See id.*, Fig. 2.

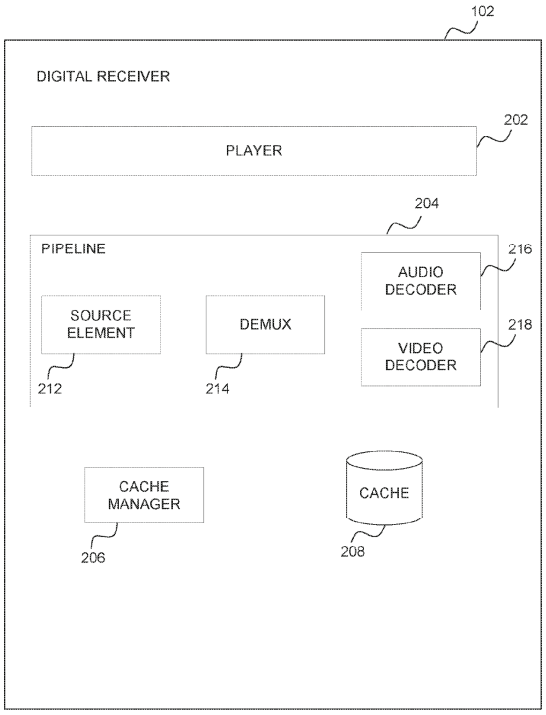


FIG. 2

72. The first component is the “player,” which manages the content delivery pipeline. *Id.*, 4:49-5:12. The player is configured to construct the pipeline when a first piece of content is

selected for display and to decide whether to maintain at least a portion of the pipeline or construct a new pipeline when a switch in content occurs. *Id.* Different pipelines may be constructed for different types of content, such as HLS pipelines for HLS content and MPEG-DASH pipelines for MPEG-DASH content. *Id.*

73. The second component is the "content delivery pipeline" (also referred to as "pipeline"), which is constructed by acquiring appropriate resources for obtaining and processing content data. *Id.* The resources of the pipeline comprise a source element, a demultiplexer ("demux"), an audio decoder, and a video decoder. *Id.* The source element manages the downloading of content data for the selected piece of content and also manages bitrate adaptation at the digital receiver. *Id.* In one embodiment, the source element remembers a last bitrate that is used for playback of a current/previous piece of content, and continues to use that bitrate for playback of the new content. *Id.*

74. The '703 patent describes how this bitrate preservation approach differs from conventional systems: "As such, if the last bitrate is high, the source element will start with the same high bitrate for the new content. If the new content cannot be playback at that bitrate, then the source element will lower the bitrate." *Id.*, 5:24-30. This allows playback of the new content at the most optimal bitrate instantly instead of having to heuristically re-compute the optimal bitrate starting from the lowest possible bitrate. *Id.*, 7:13-16.

75. A third component is the pipeline preservation mechanism. The '703 patent explains that "[i]n contrast, example embodiments may maintain or preserve a portion (or an entire) content delivery pipeline (e.g., comprising a source element, a demultiplexer ('demux'), a video decoder, and an audio decoder) used to obtain the previous piece of content instead of reconstructing a pipeline (e.g., destroying the content delivery pipeline and building a new content

delivery pipeline)." *Id.*, 2:58-63. The patent describes a conditional preservation approach where the system determines whether the new piece of content is of the same content type as the first piece of content. *Id.*, Fig. 4, operation 404.

76. If the content types match (e.g., both are HLS format or both are MPEG-DASH format), the system further examines codec information to determine whether the types of decoders needed for the new content are the same as the decoders currently in the pipeline. *Id.*, 8:15-35. If the decoder types match, "the entire pipeline is preserved. In other words, the resources of the pipeline are maintained and continued to be used to playback the new content." *Id.* However, if the new content needs different decoders, "the decoders (e.g., the audio decoder and the video decoder) are released" and "a remaining portion of the pipeline (e.g., the source element and the demux) are preserved or maintained." *Id.* The system then acquires a new set of decoders applicable to the new content and adds them to the preserved portion of the pipeline. *Id.*

77. A fourth component is the cache manager, which manages the prefetching of metadata for content that may potentially be selected for playback. *Id.*, 5:40-654. The cache manager predicts content the user may be interested in viewing based on navigational context and prefetches metadata comprising URLs where content chunks are available, URLs for different bitrates, license data, and codec information. *Id.* This prefetched metadata is stored in a cache and used to reduce latency when content is subsequently selected. *Id.*

78. The '703 patent further describes how the methodologies "improve upon latency during content changes while maintaining image quality," and how "the preservation of the pipeline also allows for playback of the new content as quickly as possible." *Id.*, 2:64-3:1; 3:20-25.

79. The ’703 patent thus claims particular solutions to solving the technical problem of “optimizing content change (e.g., reducing time for a change in channel or loading of new content) regardless of the delivery channel” by “causing playback, by a digital receiver, of a first piece of content and receiving a selection of a new piece of content for playback during the playback of the first piece of content” and “maintaining a bitrate used for playback of the first piece of content to initiate playback of the new piece of content” while “determining whether to preserve at least a portion of a playback pipeline when switching to playback of the new piece of content.” *Id.*, 3:26-46.

80. Claim 1 of the ’703 patent recites a method performed by a digital receiver that includes: (i) receiving a selection of a new piece of content for playback during playback of a first piece of content; (ii) in response to receiving the selection, transitioning to the new piece of content; (iii) determining whether the new piece of content is of a same content type as the first piece of content; and (iv) based on the new piece of content being the same content type, determining whether to preserve at least a portion of a playback pipeline used to play back the first piece of content, where the playback pipeline comprises a source element to manage downloading of content data, a demultiplexer, an audio decoder, and a video decoder, and where the preserving comprises preserving one or more of these pipeline components. *Id.*, Claim 1.

81. The ’703 patent issued as a continuation of U.S. Patent Application No. 17/454,169 filed on Nov. 9, 2021, which is a continuation of U.S. Patent Application No. 16/645,598 filed as PCT Application No. PCT/US2018/046723 on August 14, 2018, which claims priority to Indian Application Serial No. 201741031917, filed on Sep. 8, 2017, whose claims were examined and allowed by the USPTO. The patent’s claims are directed to specific technical improvements in

digital content delivery systems, particularly addressing the problems of latency and image quality degradation that occur during content switching in conventional systems.

COUNT I: INFRINGEMENT OF U.S. PATENT NO. 12,231,703

82. The allegations of paragraphs 1-81 of this Complaint are repeated, re-alleged, and incorporated by reference as if fully set forth herein.

83. OpenTV is the owner of all rights, title, and interest in and to the ’703 patent.

84. Pursuant to 35 U.S.C. § 282, the ’703 patent is presumed valid and enforceable.

85. Pinterest has infringed, either literally or under the doctrine of equivalents, and is currently infringing, the ’703 patent in violation of 35 U.S.C. § 271(a) by making, using, offering for sale, selling, and/or importing in or into the United States without authority products, software, and/or services, including through the operation of its web-based application at www.pinterest.com and through the operation of its applications for iOS/iPadOS, Android, and Windows (the “Accused Pinterest Applications”).

86. Pinterest infringes at least claim 1 of the ’703 patent because, for example, the Accused Pinterest Applications as described at ¶¶ 90-123 satisfy each of the claim limitations either literally or under the doctrine of equivalents.

87. Claim 1 of the ’703 patent recites:

> 1. A method performed by a digital receiver, the method comprising:
> receiving a selection of a new piece of content for playback during playback of a first piece of content;
> in response to the receiving of the selection, transitioning to the new piece of content;
> determining whether the new piece of content is of a same content type as the first piece of content; and
> based on the new piece of content being the same content type as the first piece of content, determining whether to preserve at least a portion of a playback pipeline used to play back the first piece of content, the playback pipeline comprising a source element to manage the downloading of content

> data for the new piece of content, a demultiplexer, an audio decoder, and a video decoder, the preserving of at least the portion of the playback pipeline comprising preserving one or more of the source element, the demultiplexer, the audio decoder, or the video decoder used to obtain the first piece of content for the new piece of content.

88. Based on the publicly available evidence cited below in ¶¶ 90-123, it is plausible that Pinterest's Accused Pinterest Applications satisfy each of the limitations of at least claim 1 of the '703 patent.

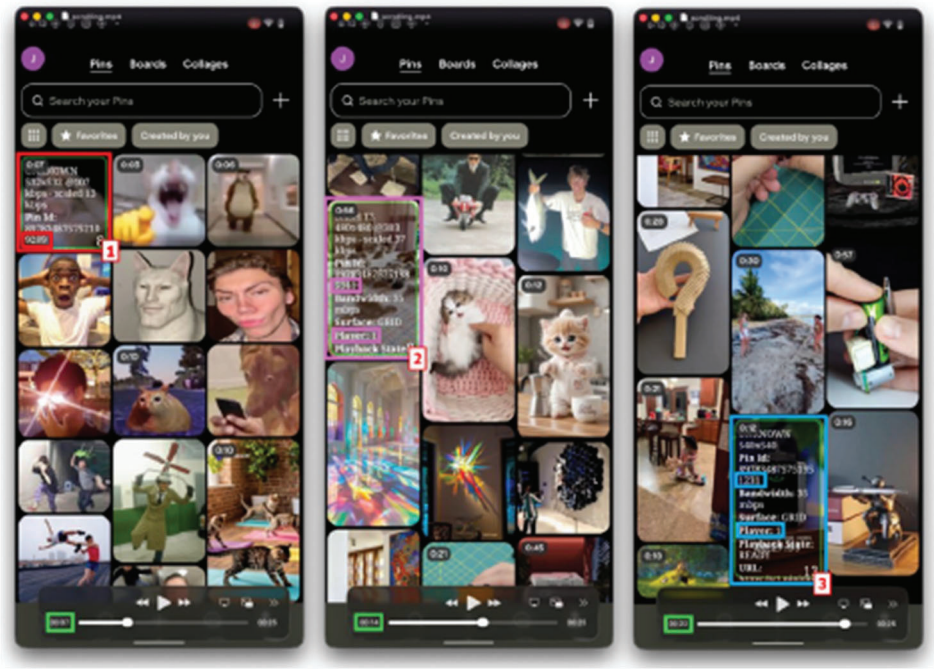
89. Use of the Accused Pinterest Applications performs each of the limitations of at least claim 1 of the '703 patent by, for example, maintaining portions of the playback pipeline when a user selects a video Pin by either scrolling through a feed or clicking on a video Pin to transition to full-screen mode, as explained below.

1. A method performed by a digital receiver

90. The Accused Pinterest Applications when used on a smartphone, tablet, or desktop, perform a method by a digital receiver. For example, an Android smartphone constitutes a digital receiver.

2. receiving a selection of a new piece of content for playback during playback of a first piece of content;

91. The Accused Pinterest Applications perform receiving a selection of a new piece of content for playback during playback of a first piece of content. The Pinterest Android application receives a selection of a new video Pin for playback during playback of a first video Pin when a user, for example, scrolls down or up through a feed with video Pins as depicted in the three screen shots below. As described above, the three screen shots below were taken progressively as a user scrolled through their feed.



92. As a user scrolls through their feed as depicted in the middle and right screenshots, the Pinterest Android application receives a selection of a third video Pin **[3]** for playback while a second video Pin **[2]** is still playing.

93. Pinterest's official help documentation describes these user interactions as available during video playback. For mobile platforms, Pinterest states that "Video Pins play on your mobile device when 50% of the video Pin is in view. To watch the video in a larger view, tap the Pin."[34] Pinterest's video ads documentation further state that "[v]iewers can tap on the video to play it in a larger view, replay it, or play it with audio."[35]

94. Thus, the Accused Pinterest Applications perform receiving a selection of a new piece of content for playback during playback of a first piece of content.

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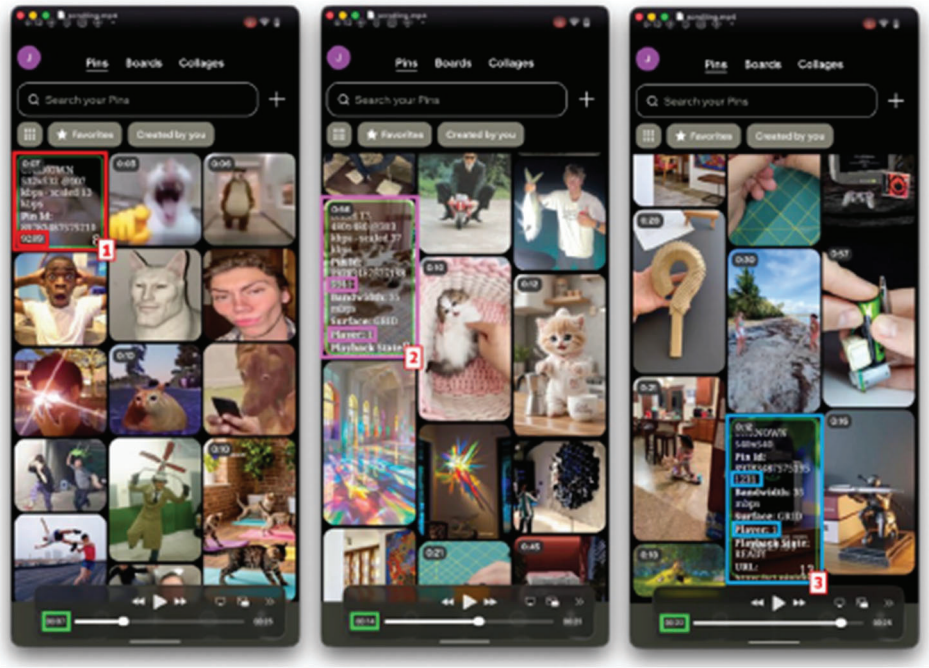
[34] Pinterest, "Manage video autoplay settings", https://help.pinterest.com/en/article/video-on-pinterest, (last accessed November 18, 2025).
[35] Pinterest, "Video ads", https://help.pinterest.com/en/business/article/promoted-video-with-autoplay, (last accessed November 18, 2025).

3. in response to the receiving of the selection, transitioning to the new piece of content;

95. The Accused Pinterest Applications perform in response to the receiving of the selection, transitioning to the new piece of content. For example, in response to the user scrolling through their feed, the Pinterest Android application initiates a transition from playing the second video Pin [2] to the third video Pin [3]:



96. This is evident from observing the third video Pin [3] beginning to play in the right screenshot after the second video Pin [2] played in the middle screenshot.

97. Thus, the Accused Pinterest Applications perform in response to the receiving of the selection, transitioning to the new piece of content.

4. determining whether the new piece of content is of a same content type as the first piece of content; and based on the new piece of content being the same content type as the first piece of content, determining whether to preserve at least a portion of a playback pipeline used to play back the first piece of content,

98. The Accused Pinterest Applications perform determining whether the new piece of content is of a same content type as the first piece of content and based on the new piece of

content being the same content type as the first piece of content, determining whether to preserve at least a portion of a playback pipeline used to play back the first piece of content. For example, as described above, Pinterest employs a modified version of ExoPlayer for playback of video content on Pinterest's Android application. An AndroidX Media3 blog post describes an improvement in how ExoPlayer 2.10 reuses audio and video decoders.[36] The post explains that to reuse decoders for video playback, ExoPlayer must, for example, determine whether the video content shares the same codec:[37]

> **Requirements for decoder reuse**
>
> Decoders cannot always be reused. One obvious requirement is that the decoders held by the player must be the ones that are required to play the new piece of media. Hence it's not possible to reuse a video decoder when switching between VP9 and H.264 playbacks, for example. The full story is significantly more complicated, with multiple modes of decoder reuse and conditions for each one. These details are beyond the scope of this blog post, however an interested reader can find the relevant code blocks here for audio, and here for video.

99. Publicly available ExoPlayer code for version 2.10 as identified by the AndroidX Media3 blog post includes a "canKeepCodec" function that tests for possible reuse of a video decoder:

[36] Olly Woodman, Improved decoder reuse in ExoPlayer, Medium https://medium.com/google-exoplayer/improved-decoder-reuse-in-exoplayer-ef4c6d99591d (last accessed November 18, 2025).
[37] *Id.*

```
501     @Override
502     protected @KeepCodecResult int canKeepCodec(
503         MediaCodec codec, MediaCodecInfo codecInfo, Format oldFormat, Format newFormat) {
504       if (codecInfo.isSeamlessAdaptationSupported(
505               oldFormat, newFormat, /* isNewFormatComplete= */ true)
506           && newFormat.width <= codecMaxValues.width
507           && newFormat.height <= codecMaxValues.height
508           && getMaxInputSize(codecInfo, newFormat) <= codecMaxValues.inputSize) {
509         return oldFormat.initializationDataEquals(newFormat)
510             ? KEEP_CODEC_RESULT_YES_WITHOUT_RECONFIGURATION
511             : KEEP_CODEC_RESULT_YES_WITH_RECONFIGURATION;
512       }
513       return KEEP_CODEC_RESULT_NO;
514     }
```

https://github.com/google/ExoPlayer/blob/92a7bb534a706fe917308af48a4958c99b3bb754/library/core/src/main/java/com/google/android/exoplayer2/video/MediaCodecVideoRenderer.java#L502 at lines 501-514 (last accessed November 18, 2025)

100. Similar functionality exists in later versions of Android ExoPlayer by way of the function "canReuseCodec":

```
1247     @Override
1248     protected DecoderReuseEvaluation canReuseCodec(
1249         MediaCodecInfo codecInfo, Format oldFormat, Format newFormat) {
1250       DecoderReuseEvaluation evaluation = codecInfo.canReuseCodec(oldFormat, newFormat);
1251
1252       @DecoderDiscardReasons int discardReasons = evaluation.discardReasons;
1253       CodecMaxValues codecMaxValues = checkNotNull(this.codecMaxValues);
1254       if (newFormat.width > codecMaxValues.width || newFormat.height > codecMaxValues.height) {
1255         discardReasons |= DISCARD_REASON_VIDEO_MAX_RESOLUTION_EXCEEDED;
1256       }
1257       if (getMaxInputSize(codecInfo, newFormat) > codecMaxValues.inputSize) {
1258         discardReasons |= DISCARD_REASON_MAX_INPUT_SIZE_EXCEEDED;
1259       }
1260
1261       return new DecoderReuseEvaluation(
1262           codecInfo.name,
1263           oldFormat,
1264           newFormat,
1265           discardReasons != 0 ? REUSE_RESULT_NO : evaluation.result,
1266           discardReasons);
1267     }
```

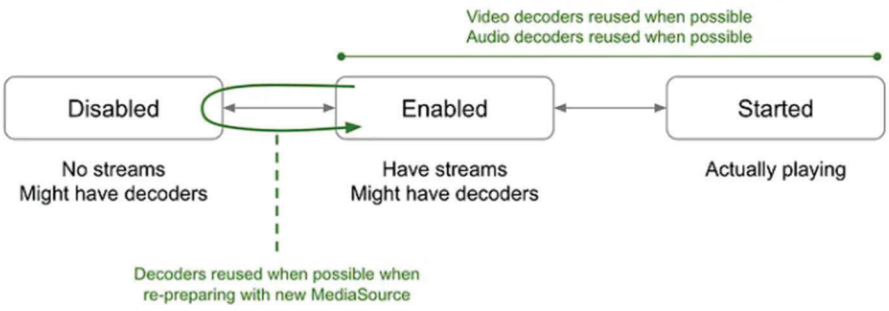
https://github.com/androidx/media/blob/1.6.1/libraries/exoplayer/src/main/java/androidx/media3/exoplayer/video/MediaCodecVideoRenderer.java at lines 1247-1267 (last accessed November 18, 2025)

101. The AndroidX Media3 blog post further explains how as of ExoPlayer 2.10, decoders may be reused when re-preparing the player to play a different MediaSource:[38]

[38] *Id.*

Improved decoder reuse in 2.10

In ExoPlayer 2.10 we've made changes that enable audio decoders to be reused. We've also enabled decoder reuse when re-preparing the player to play a different MediaSource, by allowing renderers to hold decoders when transitioning through the disabled state. These changes are summarized in the diagram below.



Decoder reuse in ExoPlayer 2.10

Id.

102. The blog post further describes that to benefit from decoder reuse, developers should use a single ExoPlayer instance for all playbacks when switching between videos and when re-preparing the player with a different video:

Making sure your app benefits from decoder reuse

To ensure that your app benefits from decoder reuse, it's important that:

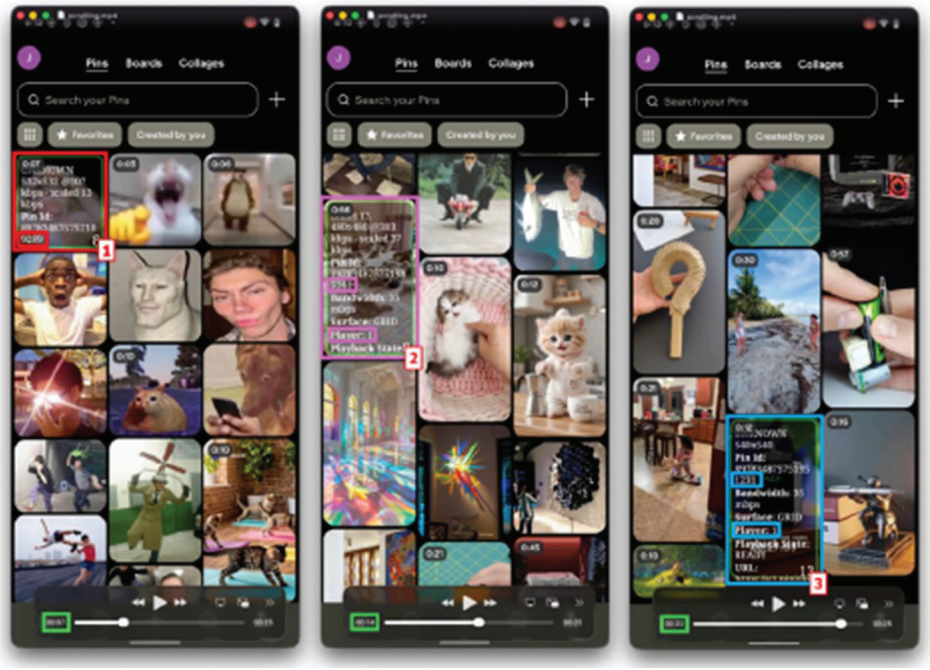
1. For use cases where your app switches between playing a number of videos, use a single ExoPlayer instance for all playbacks, rather than instantiating a new instance each time. This is because decoders are only reused within an ExoPlayer instance, not between them.
2. When re-preparing the player with a different video, call `prepare()` with the new `MediaSource` without calling `stop()` first. This is because by default, ExoPlayer will still release decoders when `stop()` is called.

Top highlight

Id.

103. On information and belief, Pinterest's Android application implements the decoder reuse functionality of ExoPlayer version 2.10 and later using a modified version of Android ExoPlayer's code base. This is evidenced, for example, by the fact that Pinterest uses a

single ExoPlayer instance for playback of video Pins when a user is scrolling through their feed (as described in paragraphs 57-63 above):



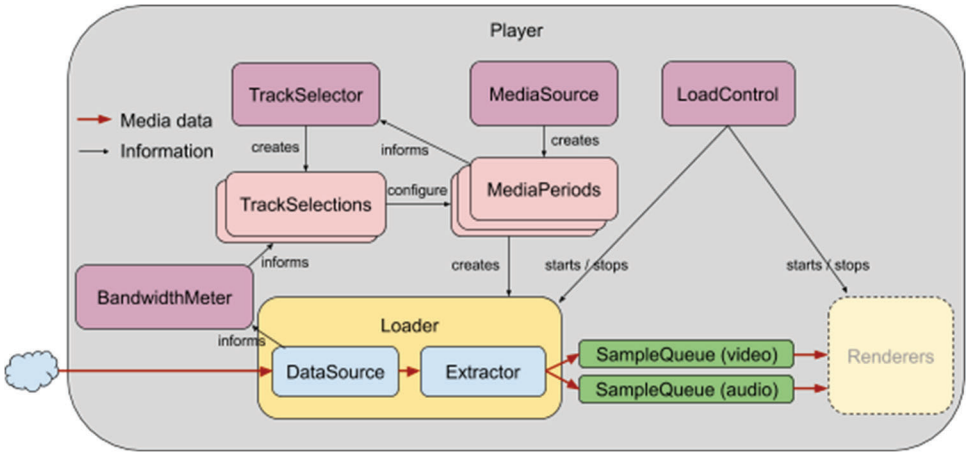
104. In particular, the above image shows how "Player: 1" is used by both video Pin [2] and video Pin [3] as a user progressively scrolls through their feed.

105. Thus, the Accused Pinterest Applications perform determining whether the new piece of content is of a same content type as the first piece of content; and based on the new piece of content being the same content type as the first piece of content, determining whether to preserve at least a portion of a playback pipeline used to play back the first piece of content.

5. the playback pipeline comprising a source element to manage the downloading of content data for the new piece of content, a demultiplexer, an audio decoder, and a video decoder,

106. The Accused Pinterest Applications perform the method wherein the playback pipeline comprising a source element to manage the downloading of content data for the new piece of content, a demultiplexer, an audio decoder, and a video decoder.

107. For example, the Pinterest Android application employs multiple player instances, organized as a pool of player instances, to handle playback of individual videos within video Pins. Each player instance is an instance of an ExoPlayer class, a media player framework developed by Google.[39] On information and belief, Google ExoPlayer as implemented by the Pinterest Android application contains the playback pipeline elements corresponding to this limitation, including the media source, demultiplexer, decoder modules, and renderers required to execute playback.[40]



108. The Pinterest Android application includes a "source element" in the form of the DefaultTrackSelector class. As described in the open-source ExoPlayer media player library,[41] the DefaultTrackSelector manages the selection and retrieval of media tracks, including adaptive streaming variants, and coordinates the delivery of the appropriate media stream for decoding and playback.

---

[39] GitHub, "ExoPlayer module," https://github.com/androidx/media/tree/1.6.1/libraries/exoplayer, (last accessed November 18, 2025).
[40] Android Developers, "ExoPlayer," https://developer.android.com/media/media3/exoplayer/glossary, (last accessed November 18, 2025).
[41] Android Developers, "ExoPlayer," https://developer.android.com/reference/androidx/media3/exoplayer/ExoPlayer, (last accessed November 18, 2025).

- A `TrackSelector` that selects tracks provided by the MediaSource to be consumed by each of the available Renderers. The library provides a default implementation (`DefaultTrackSelector`) suitable for most use cases. A TrackSelector is injected when the player is created.

109. The TrackSelector component performs the function of selecting the media tracks to be processed by the available renderers within the playback pipeline. When videos are streamed using MPEG-DASH, a protocol for adaptive bitrate streaming, the available "tracks" represent different encodings of the same video content at varying bitrates. The TrackSelector component—particularly the DefaultTrackSelector used in ExoPlayer—determines which version of the video will be retrieved and played, selecting the stream most suitable for the current network conditions.

110. To perform this selection, each TrackSelector maintains an associated BandwidthMeter object, which continuously monitors and estimates the available network bandwidth. As described in the open-source implementation,[42] the BandwidthMeter acts as a "component that estimates the network bandwidth" and supplies that data to the TrackSelector for dynamic adaptation. In this configuration, the TrackSelector, together with its BandwidthMeter, manages the download and adaptation of the video stream, selecting the appropriate bitrate and ensuring efficient playback.

BandwidthMeter

Component that estimates the network bandwidth, for example by listening to data transfers. In adaptive streaming, bandwidth estimates can be used to select between different bitrate tracks during playback.

For more information, see the component Javadoc.

111. The Pinterest Android application utilizes videos encoded within the MP4 container format, as specified in Pinterest's official documentation.[43] The MP4 format defines the structure

[42] *Id.*
[43] Review Pin specs, Pinterest Help Center, https://help.pinterest.com/article/review-pin-specs, (last accessed November 18, 2025).

of a data container that encapsulates both audio and video streams within a single file. To play such media, it is technically necessary for the receiving system to download the MP4 file, demultiplex it—that is, unpack the audio and video streams—and subsequently direct those separate streams to appropriate audio and video decoders. The decoded outputs are then rendered synchronously by the application's playback engine to present continuous audiovisual playback to the user.

112. The Pinterest Android application includes a "demultiplexer" including a *FragmentedMp4Extractor* class. The *FragmentedMp4Extractor* class extracts data from an MP4 container format:

FragmentedMp4Extractor

Artifact: androidx.media3:media3-extractor

View Source

Kotlin | Java

```
@UnstableApi
public class FragmentedMp4Extractor implements Extractor
```

Extracts data from the FMP4 container format.

https://developer.android.com/reference/androidx/media3/extractor/mp4/FragmentedMp4Extractor

113. Extracting the data from the container format involves, in particular, separating it into audio and video data. Thus, the *FragmentedMp4Extractor* from the open-source media player library is a demultiplexer.

114. The Pinterest Android application includes an "audio decoder" including a *MediaCodecAudioRenderer* class as part of a player instance.

MediaCodecAudioRenderer

Artifact: androidx.media3:media3-exoplayer
View Source
Kotlin | Java

```
@UnstableApi
public class MediaCodecAudioRenderer extends MediaCodecRenderer implements MediaClock
```

java.lang.Object
↳ androidx.media3.exoplayer.BaseRenderer
↳ androidx.media3.exoplayer.mediacodec.MediaCodecRenderer
↳ androidx.media3.exoplayer.audio.MediaCodecAudioRenderer

Decodes and renders audio using `MediaCodec` and an `AudioSink`.

https://developer.android.com/reference/androidx/media3/exoplayer/audio/MediaCodecAudioRenderer

115. According to Android documentation, the *MediaCodecAudioRender* class "[d]ecodes and renders audio." *Id.* Thus, the *MediaCodecAudioRender* from the open-source media player library is an audio decoder.

116. The Pinterest Android application includes a "video decoder" including a *MediaCodecVideoRenderer* class.

MediaCodecVideoRenderer

Artifact: androidx.media3:media3-exoplayer
View Source
Kotlin | Java

```
@UnstableApi
public class MediaCodecVideoRenderer extends MediaCodecRenderer implements VideoFrameReleaseControl
```

java.lang.Object
↳ androidx.media3.exoplayer.BaseRenderer
↳ androidx.media3.exoplayer.mediacodec.MediaCodecRenderer
↳ androidx.media3.exoplayer.video.MediaCodecVideoRenderer

Known direct subclasses
CapturingRenderersFactory.CapturingMediaCodecVideoRenderer

Decodes and renders video using `MediaCodec`.

https://developer.android.com/reference/androidx/media3/exoplayer/video/MediaCodecVideoRenderer

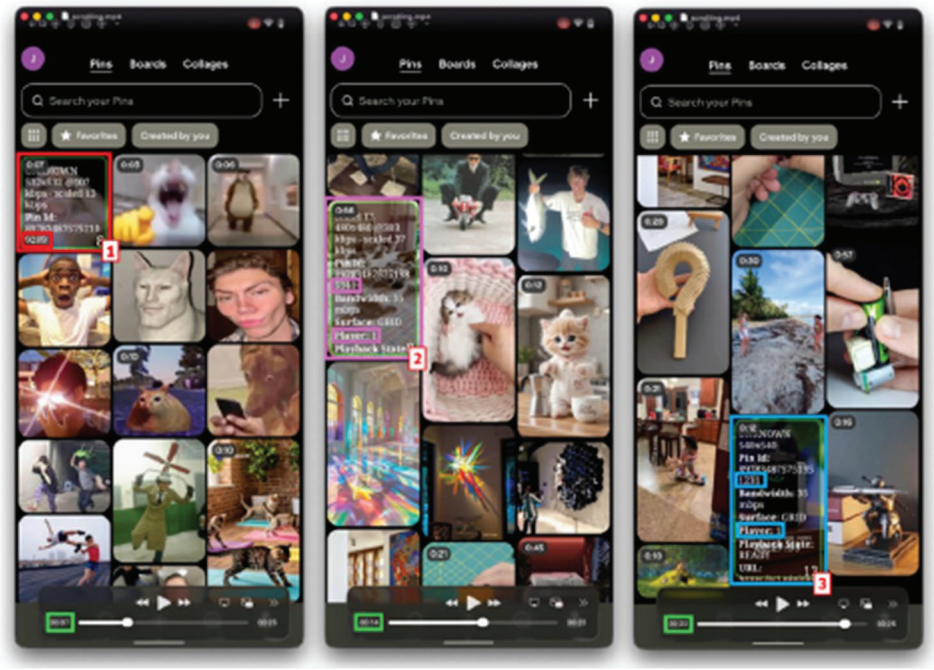
117. According to Android documentation, the *MediaCodecVideoRenderer* class "[d]ecodes and renders video." *Id.* Thus, the *MediaCodecVideoRenderer* from the open-source media player library is a video decoder.

118. It necessarily follows that the Pinterest Android application implements a playback pipeline containing the components described in this limitation. Without such a pipeline—including the necessary source, demultiplexer, audio and video decoder, and rendering elements—it would be technically impossible for the application to perform MP4 playback as observed. The functioning of these components within Pinterest's video playback framework therefore demonstrates the existence of the claimed playback pipeline.

119. Thus, the Accused Pinterest Applications perform the method wherein the playback pipeline comprising a source element to manage the downloading of content data for the new piece of content, a demultiplexer, an audio decoder, and a video decoder.

6. the preserving of at least the portion of the playback pipeline comprising preserving one or more of the source element, the demultiplexer, the audio decoder, or the video decoder used to obtain the first piece of content for the new piece of content.

120. The Accused Pinterest Applications perform the method wherein based on the new piece of content being the same content type as the first piece of content, the preserving of at least the portion of the playback pipeline comprising preserving one or more of the source element, the demultiplexer, the audio decoder, or the video decoder used to obtain the first piece of content for the new piece of content. For example, the Pinterest Android application, when using ExoPlayer version 2.10 or greater, preserves at least the audio and/or video decoder used for a first video Pin to playback a second selected video Pin:



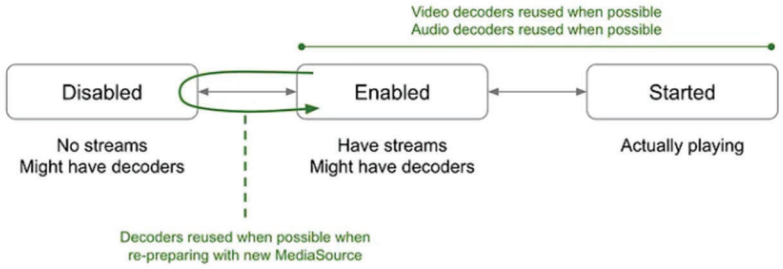
121. As illustrated by the above example, the Pinterest Android application will re-use the same ExoPlayer instance ("Player: 1") for at least each of video Pins **[2]**, and **[3]** as the user scrolls through a feed.

122. This re-use of ExoPlayer instances is indicative of the re-use of audio and video decoders when playing different media sources as described in an AndroidX Media3 blog post:[44]

[44] Olly Woodman, Improved decoder reuse in ExoPlayer, Medium, https://medium.com/google-exoplayer/improved-decoder-reuse-in-exoplayer-ef4c6d99591d, (last accessed November 18, 2025)

Improved decoder reuse in 2.10

In ExoPlayer 2.10 we've made changes that enable audio decoders to be reused. We've also enabled decoder reuse when re-preparing the player to play a different MediaSource, by allowing renderers to hold decoders when transitioning through the disabled state. These changes are summarized in the diagram below.



Decoder reuse in ExoPlayer 2.10

Id.

123. Thus, the Accused Pinterest Applications perform the method wherein based on the new piece of content being the same content type as the first piece of content, the preserving of at least the portion of the playback pipeline comprising preserving one or more of the source element, the demultiplexer, the audio decoder, or the video decoder used to obtain the first piece of content for the new piece of content.

124. Pinterest's Accused Pinterest Applications thus include each and every limitation of at least claim 1 of the '703 patent; accordingly, Pinterest literally infringes this claim, including by using and testing the Accused Pinterest Applications.

125. During discovery and development of its infringement contentions, Plaintiff may provide additional theories under which Pinterest infringes the '703 patent besides the examples provided above, including for the same system and using the same components identified above, and nothing in the example above is meant to limit the infringement allegations of Plaintiff or limit the interpretations of the claims or their terms.

126. Upon information and belief, since at least the above-mentioned date when Pinterest was on notice of its infringement, Pinterest has actively induced, under U.S.C. § 271(b), third-party manufacturers, distributors, importers and/or consumers that purchase, sell, or use the Accused Pinterest Applications that include all of the limitations of one or more claims of the '703 patent to directly infringe one or more claims of the '703 patent by making, having made, using, offering for sale, selling, and/or importing the Accused Pinterest Applications.

127. Since at least the notice provided on the above-mentioned date, Pinterest has been and continues to do so with knowledge, or with willful blindness of the fact, encourage the induced acts that constitute infringement of the '703 patent.

128. Upon information and belief, Pinterest intends to cause, and has taken affirmative steps to induce, infringement by these third-party manufacturers, distributors, importers, and/or consumers by, *inter alia*, creating advertisements that promote the infringing use of the Accused Pinterest Applications, creating established distribution channels for the Accused Pinterest Applications into and within the United States knowing that the use of such applications results in infringement, distributing or making available instructions or manuals for its mobile and web-based client to users, and/or providing technical support or services for its mobile and web-based clients in the United States. For example, Pinterest makes the Accused Pinterest Applications available through, *inter alia*, the Apple App Store at https://apps.apple.com/us/app/pinterest/id429047995 and Android Store here: https://play.google.com/store/apps/details?id=com.pinterest&hl=en_US&pli=1. Pinterest further advertises the Mobile Application on the Website here: https://help.pinterest.com/en/article/use-pinterest-in-a-mobile-browser.

129. Pinterest continues to advertise its mobile and web-based client, including the Accused Pinterest Applications and publish specifications and promotional literature regarding the Accused Pinterest Applications and encouraging users to operate the Pinterest client necessarily resulting in the use of the Accused Pinterest Applications, knowing that the operation of the Accused Pinterest Applications infringes the '703 patent since at least service of this Complaint.

130. Users, pursuant to Pinterest's instructions, each directly infringe the '703 patent by, for example, using the Accused Pinterest Applications. Further, Pinterest encourages, facilitates or otherwise causes its users to infringe the '703 patent by providing and causing access to video content using Pinterest services, products, and/or features. Therefore, Pinterest is also inducing the direct infringement of the '703 patent by users of Pinterest's services, products, and/or features.

131. Pinterest's infringement has caused and continues to cause damage to OpenTV, and OpenTV is entitled to recover damages sustained as a result of Pinterest's wrongful acts in an amount subject to proof at trial.

132. OpenTV has suffered and continues to suffer damages and irreparable harm as a result of Pinterest's past and ongoing infringement in an amount to be determined at trial.

133. Unless Pinterest's infringement is enjoined, OpenTV will continue to be damaged and irreparably harmed.

134. OpenTV meets the criteria for, and is entitled to, a permanent injunction.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff prays for the following relief:

A. A judgment that Pinterest has infringed one or more claims of the '703 patent literally and/or under the doctrine of equivalents directly and/or indirectly by inducing infringement and/or by contributory infringement;

B. An award of monetary damages for Pinterest's infringement of the '703 patent, including lost profits and/or a reasonable royalty pursuant to 35 U.S.C. § 284, including supplemental damages for any post-verdict infringement up until entry of the final judgment with an accounting as needed;

C. An order finding this an exceptional case under 35 U.S.C. § 285 and that Plaintiff be awarded its costs, disbursements, and reasonable attorneys' fees incurred in this action under 35 U.S.C. § 285 or any other applicable law;

D. An award of prejudgment and post-judgment interest on Plaintiff's damages;

E. An order permanently enjoining Pinterest and its officers, agents, employees, and those acting in privity with them, from using, offering for sale, selling, or importing any product that infringes, or induces the infringement of, the '703 patent;

F. That Plaintiff be granted their reasonable attorneys' fees in this action; under 35 U.S.C. § 285 and all other applicable statutes and rules in common law as may apply; and

G. That this Court award Plaintiff such other and further relief as the Court deems proper.

DEMAND FOR JURY TRIAL

In accordance with Rule 38 of the Federal Rules of Civil Procedure and D. Del. LR 38.1, OpenTV respectfully demands a jury trial on all claims and issues so triable.

Dated: November 18, 2025

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