

EXHIBIT E**MOOD MEDIA CLAIM CHART****U.S. Patent No. 12,075,116 B2**

“Method, System and Apparatus for Multimedia Content Delivery to Cable TV and Satellite Operators”

This claim chart compares representative Claim 1 of U.S. Patent No. 12,075,116 B2 (the “116 Patent”) against the Mood Harmony platform, Mood Visuals, and related Mood Media products and services (collectively, the “Mood Harmony System”) operated, sold, and offered for sale by Defendants Mood Media Corporation and its affiliated entities (“Mood Media”). Representative claim language is reproduced in the left column; evidence of infringement appears in the right column. All cited URLs were verified as of the date of filing. This chart is exemplary, not exhaustive; Plaintiff reserves all rights to supplement and amend based on information obtained through discovery.

U.S. Patent No. 12,075,116 B2 — Claim 1	Mood Harmony System (Evidence of Infringement)
<p>A method of providing a media stream from a computing system comprising a caching unit and at least one multicasting server, the method comprising:</p>	<p>The Mood Harmony system provides a media stream from a computing system having a caching unit and at least one multicasting server. Mood's Harmony platform is a cloud-hosted content management system that retrieves, stores, and distributes audio and video content to Harmony media players at customer premises.</p> <p>Upon information and belief, the Harmony CMS includes (i) a caching unit that stores generated multimedia content (both in the cloud via Amazon Web Services infrastructure and on the Harmony media player's local solid-state storage), and (ii) at least one multicasting server that distributes the content stream to broadcast media channels (in-store display systems) as further shown below.</p> <p>Source: https://support.moodmedia.com/wp-content/uploads/2025/06/Harmony-Media-Player-Network-Security-Documentation.pdf</p>
<p>receiving, at the caching unit, a request from the at least one multicasting server for at least one media stream for playback on a broadcast media channel, wherein the request comprises a requested format;</p>	<p>The caching unit in the Mood Harmony system receives requests for media streams in specified formats. The Mood Visuals template dictates the format of the requested stream delivered to each Harmony media player (the broadcast media channel at the customer's premises).</p> <p>Logging in to Harmony: Visit https://harmony.moodmedia.com; enter Username and Password; click the Visuals icon. See https://support.moodmedia.com/library/harmony-visuals/Harmony-Visual-Basics.pdf at p. 4.</p> <p>Upon information and belief, the Mood Harmony system includes at least one multicasting server and uses multicast addresses to efficiently distribute content. Evidence of multicast functionality includes:</p> <ul style="list-style-type: none"> • Use of <i>.local</i> domain names (e.g., https://profusion-398994.local), which are resolved via Multicast DNS (mDNS) per RFC 6762, indicating multicast network architecture for device discovery and addressing within the customer's broadcast network. • Scalable simultaneous delivery of identical content streams to many thousands of Harmony endpoints — functionally a content-multicasting architecture implemented through a tiered CDN (AWS CloudFront) with edge replication. • Amazon's S3/CloudFront-backed caching layer stores the media streams and serves them upon request from the Harmony player and/or CMS multicast subsystem, in formats including H.264 MP4 video, PNG, and JPEG images as specified by the Mood Visuals template. <p>The Mood System includes multicast Server and uses multicast addresses (e.g. mDNS via IGMP) and has a caching unit (e.g. Amazon's S3) that stores a media stream, and receives requests for playback on a broadcast media channel in a particular format.</p>

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	<p>The use of “.local” e.g. https://profusion-398994.local, implies the use of multicast server to respond to retrieving content.</p> <p>Source: https://support.moodmedia.com/profusion-ih/how-to-log-on-to-the-online-control-panel/; RFC 6762 available at https://datatracker.ietf.org/doc/html/rfc6762. where the domain name with “.local” uses a Multicast DNS or mDNS</p> <p>The Caching unit or storage in a cloud-based platform (e.g. Amazon or AWS) or Harmony CMS.</p> <p>Source: https://support.moodmedia.com/wp-content/uploads/2025/06/Harmony-Media-Player-Network-Security-Documentation.pdf at Pg. 2</p>
<p>obtaining, at the caching unit, content from the internet corresponding to a plurality of multimedia items from at least one website offering the content in at least one first format, wherein the obtaining comprises:</p>	<p>The Mood Media system includes a caching unit obtains from the web, different resources e.g. cover art and other internet-based items that are in a 1st format (e.g. Images/PNG) which correspond to content that is part of a multimedia items that will be delivered as multimedia items to a customer’s premise. “Media Players do not need continuously stream content” hence, a media player operates on multimedia items.</p> <p>The Mood Harmony system's caching unit obtains from the internet a plurality of multimedia items — including cover art, images, template elements, live weather data, RSS feed content, and social media feed content (Twitter/X) — in at least one first (e.g., PNG and JPEG images in RGB color mode, HTML template content) that is converted to video and correspond to multimedia items ultimately delivered to the customer's premises to the “Media Player” device..</p> <p>Mood's own Network Security Documentation states that the Harmony platform integrates with multiple external internet content sources, including <i>mvision-us.moodmedia.com</i>, <i>harmony.moodmedia.com/feeds</i>, <i>*.bsn.cloud</i>, and <i>*.brightsignnetwork.com</i> (the last two required for Harmony MAVP-B2 and BrightSign <i>media players</i>). Media Players imply using multimedia items to be played.</p> <p>The Mood Harmony platform provides “Flexible Content Management”: “Harmony media players seamlessly integrate with the Harmony CMS, allowing businesses to manage and update their content remotely. The cloud-based CMS provides a user-friendly interface for scheduling content, creating playlists, and monitoring player status.” See https://support.moodmedia.com/wp-content/uploads/2025/06/Harmony-Media-Player-Network-Security-Documentation.pdf at p. 2.</p> <p>Hence, caching is present as shown in <i>Id.</i> at pg. 3</p> <p>Caching is present at both the CMS (cloud) tier and the media-player (local) tier, as confirmed by Mood's own documentation describing “Local Content Storage” whereby “media players download content to local storage and play it from there.” <i>Id.</i> at p. 3.</p>
<p>retrieving, for each multimedia item of the plurality of multimedia items, at least one audio file corresponding to an audio component of the multimedia item and a plurality of screen captures corresponding to a video component of the multimedia item;</p>	<p>For each multimedia item in the Mood Harmony platform, the system retrieves (i) at least one audio file corresponding to the audio component (Mood Music tracks and/or embedded audio within Mood Visuals templates) and (ii) a plurality of screen captures corresponding to the video component of the multimedia item. Mood's own documentation confirms that Harmony media players are “designed specifically for the task of delivering high-quality audio and video content in commercial environments.”</p> <p>Source: https://support.moodmedia.com/wp-content/uploads/2025/06/Harmony-Media-Player-Network-Security-Documentation.pdf at p. 2-4.</p> <p>An audio track is retrieved by accessing the address obtained from the multicast request, and matched with the content corresponding to the multimedia items in a MOOD MEDIA template, that includes a audio, video content and playlists as shown above. The media player handles, “high-quality audio and video content in commercial environments...” “The multimedia is retrieved from the cloud “AWS Cloudfront,” “AWS US East Region”, or “brightsignnetwork.com” See <i>Id.</i> pg. 6</p>

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	<p>Multimedia content is retrieved from the cloud — specifically “AWS CloudFront” (“AWS US East (Northern Virginia) Region”), <i>bsn.cloud</i>, and <i>brightsignnetwork.com</i> — in accordance with the Mood Visuals template. <i>Id.</i> at p. 6.</p> <p>The audio component is retrieved by accessing the address obtained from the multicast request and is matched with the video content corresponding to the multimedia items in the Mood Visuals template, which includes audio, video content, and playlists.</p>
rendering a webpage by a browser using the content;	<p>A webpage is rendered by a browser using the obtained content in the Mood Harmony system. The Mood Visuals templates are constructed in HTML and are rendered by a browser engine both (i) to generate the visual output delivered to the customer's premises and (ii) to preview that output within the Harmony web-based interface.</p> <p>A webpage is rendered by a browser is done to preview a MOOD MEDIA template and visualize at a client desktop machine via a browser, via MOOD VISUALS or MOOD HARMONY for example as shown at <i>Id.</i> Pg. 6 shows web pages such as Live Feeds, Twitter Feeds, RSS Feeds, that all are web pages. Twitter, RSS Feeds, and Weather are t websites that are used by MOOD HARMNOY and cited in the documentation as shown above, as well as other websites including https://harmony.moodmedia.com/</p> <p>Source: https://support.moodmedia.com/wp-content/uploads/2025/06/Harmony-Media-Player-Network-Security-Documentation.pdf See Pg. 7</p> <p>Mood's Network Security Documentation confirms that the Harmony media players render web-based content obtained from multiple websites, including “Live Feeds,” “Twitter Feeds,” “RSS Feeds,” weather feeds, and https://harmony.moodmedia.com/. Source: https://support.moodmedia.com/wp-content/uploads/2025/06/Harmony-Media-Player-Network-Security-Documentation.pdf at p. 7.</p> <p>In addition, the Harmony MAVP-B2 and BrightSign players utilize BrightSign firmware, which upon information and belief includes an embedded Chromium-based HTML rendering engine used to render Mood Visuals HTML templates prior to playback. The HTML templates are accessed via the “Harmony User Interface” at https://harmony.moodmedia.com and rendered through a browser engine on the player.</p>
generating a plurality of screen captures of the rendered web page using a headless rendering engine;	<p>Upon information and belief, the Mood Harmony platform generates a plurality of screen captures of the rendered HTML templates using a headless rendering engine — that is, a browser engine that renders web content without a visible display surface — for purposes of producing the video stream delivered to the customer's premises.</p> <p>The following facts support this allegation:</p> <p>(1) Mood Visuals templates are authored in HTML (as Mood's own documentation acknowledges — “the templates are done in HTML, while the Channel editor is in video format”). Converting HTML templates into .MOV or H.264 MP4 video files — the output formats specified for Harmony — requires frame-by-frame rasterization of the HTML content, which in modern web platforms is accomplished exclusively through headless browser engines such as Chromium Headless or equivalent. See https://support.moodmedia.com/wp-content/uploads/2025/04/MoodVisuals_FileSpecifications.pdf.</p> <p>(2) The Channel Editor interface shows multi-item HTML templates previewed as video (“47 items 00:10:30.951”), demonstrating that the CMS converts HTML templates into video sequences through a plurality of sequential screen captures. See https://support.moodmedia.com/wp-content/uploads/2025/04/Multi-Zone-Layout-Specs.pdf.</p> <p>(3) Harmony's “Monitoring the Media Players” feature shows that the CMS captures screenshots of each player's display “in 5 minutes increments for the past few days” —</p>

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	<p>functionality that necessarily employs a headless screen-capture mechanism. See https://support.moodmedia.com/library/harmony-visuals/Harmony-Visual-Basics.pdf at p. 14.</p> <p>(4) The Harmony media players run on operating systems (Android-based for the MAVP-B2 and A2; Windows-based for the S612/MVP125/225/425) that include the WebView / Chromium components commonly used to render web content without a visible display. Discovery is expected to confirm the specific headless engine employed.</p> <p>(5) The MOOD MEDIA harmony generates a plurality of screen captures without displaying any of the images, hence a headless rendering engine renders the “Mood Media Template,” as MOOD Visuals into video objects to be delivered to a client device, by publishing a channel” or as shown at Source: https://support.moodmedia.com/wp-content/uploads/2025/04/MoodVisuals_FileSpecifications.pdf</p> <p>The file formats are either image that are turned into videos. Hence, all MOOD VISUAL content that is previewed and generated as plurality of screen captures from the web-based platform or Harmony CMS. Source: https://support.moodmedia.com/wp-content/uploads/2025/04/MoodVisuals_FileSpecifications.pdf</p>
<p>generating, at the caching unit, the plurality of multimedia items in the requested format based on the content from the internet, the generating comprising, for each of the plurality of multimedia items:</p>	<p>The caching unit receives the web content and generates multimedia items in the requested format, which are stored at the caching unit (cloud CMS and/or local Harmony player storage) and assembled into a “playlist” — i.e., a plurality of multimedia items in the requested format. See <i>Mood Visuals File Specifications</i>, https://support.moodmedia.com/wp-content/uploads/2025/04/MoodVisuals_FileSpecifications.pdf.</p> <p>The Mood Visuals File Specifications prescribe the requested output formats as H.264 MP4 video (preferred) or MOV (accepted and converted to H.264 MP4), and PNG or JPEG images in RGB color mode. Preferred video dimensions are 1920×1080 (landscape) or 1080×1920 (portrait), at 29.97 fps and a constant bit rate of 10–20 Mbps, Main or High Profile at 4.0 or 5.0 level, NTSC TV standard. Images are 72 dpi. These specifications govern the “requested format” into which each multimedia item is generated.</p> <p>The caching unit receives the web content and generates multimedia items in the requested format, that is stored at remote device, and follows the creation of a “playlist” which is a “plurality of multimedia items” in a requested format, as shown by Mood Visual File Specification, this can be .MOV or .MP4 videos. Video files such as .MOV And .MP4 are multimedia items that are requested from the internet, e.g. from Amazon AWS or the local storage at the MOOD MEDIA player</p>
<p>assembling a video component of a multimedia item using the plurality of screen captures,</p>	<p>A video component is assembled by Mood Visuals using the HTML template, images, text, and other links visualized in the preview. The assembled video is a sequence of screen captures that will be displayed at different times at the customer's premises. <i>Source</i>: https://support.moodmedia.com/wp-content/uploads/2025/04/Multi-Zone-Layout-Specs.pdf.</p> <p>The Mood Visuals user interface is web-based. See “Harmony User Interface” at https://harmony.moodmedia.com. The Channel Editor displays the result as video (e.g., “47 items 00:10:30.951”), indicating that HTML templates from https://harmony.moodmedia.com are screen-captured in sequence to generate the video output. And can be previewed as a video, the templates are done in HTML, while the Channel editor is in video format, observe: “47 items 00:10:30.951” that indicates that the HTML templates used from the website, MOOD VISUALS are screen captured in sequence of screen to generate the sequence of videos.</p>
<p>combining the plurality of screen captures and the at least one audio file, thereby creating the multimedia item, and</p>	<p>The Mood Visuals system includes audio channels; audio files are combined with the video content generated from the internet to create the media stream. Harmony media players include separate HDMI and audio outputs. Audio tracks are part of the template, or a Mood Music channel is provided. See https://us.moodmedia.com/shop/.</p>

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	<p>The MOOD VISUALS includes audio channels that indeed use audio file(s) that are combined with the content retrieved from the internet to generate the video stream. The MOOD MEDIA terminal includes HDMI and audio outputs separate. Audio-tracks are part of the Template, or a MOOD MUSIC channel is provided. “Great Music elevated with AI Messaging” indicates the use of plurality of screen captures and at least one audio file. See: https://us.moodmedia.com/shop/</p>
<p>saving the multimedia item at the caching unit;</p>	<p>The assembled media item is saved at the caching unit for playback — specifically at AWS CloudFront (cloud-tier caching) and/or at the Harmony media player's local solid-state storage (“Local Storage”) when AWS is used as the cache tier for multiple Harmony devices. See https://support.moodmedia.com/wp-content/uploads/2025/06/Harmony-Media-Player-Network-Security-Documentation.pdf at pp. 3, 6.</p> <p>The video stream is saved into the caching unit, at the remote device for playback at AWS and/or local storage in the Harmony device, as depicted above via “Local Storage” or AWS if that’s used as Cache for multiple harmony devices.</p>
<p>providing at least one media stream to a content provider for multicasting on the broadcast media channel, wherein the providing comprises:</p>	<p>The content obtained from the internet is combined with the audio file to create the media stream, and the resulting stream is provided to a content provider (Mood Media) for multicasting on the broadcast media channel. As explained above, multicast DNS (mDNS) is used to locate and address the Harmony media players at the customer's premises, and the content is broadcast to the display network via the store's Wi-Fi/Ethernet network. See https://support.moodmedia.com/profusion-ih/how-to-log-on-to-the-online-control-panel/ (describing the <i>.local</i> domain as a multicast DNS / mDNS-resolved endpoint); see also https://datatracker.ietf.org/doc/html/rfc6762 (RFC 6762, Multicast DNS).</p> <p>Upon information and belief, the broadcast media channel also includes the in-store display systems that present the content to customers on one or more screens simultaneously. See https://manuals.plus/mood-media/profusion-ih-music-player-manual.</p> <p>The content retrieved from the internet is combined with the audio file to create the media stream channel. The as explained before “mDNS” is used to retrieve the content and configure the remote device, where the content is broadcasted via the WIFI network at the store, multicasting is used by locating the devices via mDNS (multicast DNS). See: https://support.moodmedia.com/profusion-ih/how-to-log-on-to-the-online-control-panel/</p> <p>Where local refers to multicast DNS or mDNS¹ See: https://manuals.plus/mood-media/profusion-ih-music-player-manual</p>
<p>assembling the at least one media stream in the requested format using the plurality of the multimedia items saved at the caching unit;</p>	<p>Multimedia items saved at the caching unit are assembled and combined to create a media stream in the requested format (H.264 MP4 video or equivalent). The videos produced from Mood Visuals constitute the plurality of multimedia items so assembled. Mood's Channel and Playlist features — whereby assets are dragged from the Media Library into a Channel or Playlist and arranged in playback order — reflect this assembly process.</p> <p>Multimedia items are assembled and combined to create a media stream in the requested format, where videos from MOOD Visuals are a plurality of multimedia items,</p>
<p>detecting a change at the at least one website corresponding to at least one of</p>	<p>The Mood Harmony platform detects changes at websites corresponding to multimedia items saved at the caching unit and updates the caching unit accordingly. Mood's own documentation demonstrates this functionality in multiple respects:</p>

¹ See also: <https://datatracker.ietf.org/doc/html/rfc6762> at Pg. 67

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<p>the plurality of multimedia items saved at the caching unit;</p>	<p>(1) External dynamic feeds. The Harmony platform is documented as consuming live external internet feeds — including Twitter/X feeds, RSS feeds, weather feeds, and other live data sources — which are by their nature subject to change. The platform polls or subscribes to these feeds to detect and ingest changes. See https://support.moodmedia.com/wp-content/uploads/2025/06/Harmony-Media-Player-Network-Security-Documentation.pdf at p. 7.</p> <p>(2) Media Library propagation. Mood's own documentation states: “If you update properties of an asset in the Media Library it will automatically update that same asset located in the Channel.” This confirms that changes to source-website/asset properties are automatically detected and propagated by the Harmony system. See https://support.moodmedia.com/library/harmony-visuals/Harmony-Visual-Basics.pdf at p. 8.</p> <p>(3) Player-side change detection. When Mood Music is updated, “The Harmony Music player is designed to play music directly off of its storage card. On your Harmony control site, when adding new music to your Music Library it will take a few minutes for the player [to] download enough songs to play the music content you chose.” See https://support.moodmedia.com/harmony/my-music-isnt-changing-or-updating/. This confirms that the Harmony player detects and retrieves changed content in response to updates at the Harmony control site.</p> <p>(4) Scheduled “check-in” mechanism. Harmony media players perform regular scheduled check-ins with the Harmony CMS to detect changes and updates — a “Green/OK” status confirms that the player is “online and receiving content updates.” See https://support.moodmedia.com/library/harmony-visuals/Harmony-Visual-Basics.pdf at p. 14.</p> <p>(5) Content obtained from the internet is monitored to detect any changes, for example the user can change new content using the MOOD VISUALS web page. As a new update is made by the user in the web browser from the MOOD Visual website. The change is previewed and such changes are updated into the caching unit to replace and update the contents displayed by MOOD Visuals at the customer’s premise, therefore the system detects a change at the website and updates multimedia items are saved into the caching unit, See: https://support.moodmedia.com/harmony/my-music-isnt-changing-or-updating/</p>
<p>in response to the detecting the change, retrieving a new plurality of screen captures from the at least one website for the at least one of the plurality of multimedia items; and</p>	<p>When a change is detected, new content from the internet is retrieved by the Harmony system. When a user updates content displayed by Mood Visuals — including a plurality of multimedia items from the Mood template website — the updated content is retrieved and a new plurality of screen captures is produced. See https://support.moodmedia.com/library/harmony-visuals/Harmony-Visual-Basics.pdf at p. 8 (“Select the channel in the Channel Library that you would like to edit... If you update properties of an asset in the Media Library it will automatically update that same asset located in the Channel”).</p> <p>If the content changes as the user updates the content, new content from the internet is retrieved. Once that new content is updated by the MOOD VISUAL user and displayed by MOOD Visuals including a plurality of multimedia items from the MOOD Template website are updated.</p> <p>As MOOD VISUALS manual states “if you update properties of an asset in the media library it will automatically update.....”</p> <p>As shown at https://support.moodmedia.com/library/harmony-visuals/Harmony-Visual-Basics.pdf at Pg. 8</p> <p>Upon information and belief, because Mood Visuals templates are HTML-based and their rendered output depends on the live content of source websites and feeds, the Harmony system</p>

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	retrieves new content from such websites and re-renders the affected multimedia items (producing a new plurality of screen captures) in response to detected changes.
reassembling the at least one of the plurality of multimedia items using the new plurality of screen captures, thereby creating at least one updated multimedia item.	<p>Once new content (e.g., new songs, new videos, new template data) is issued, the affected multimedia items are reassembled to create an updated multimedia item. Mood's "Publish All Channels & Force Update" feature confirms this reassembly step: "Publishes the content in all Channels. The content will begin downloading to the media player within 10 minutes and begin playing once downloaded (based on scheduling)." See https://support.moodmedia.com/library/harmony-visuals/Harmony-Visual-Basics.pdf at p. 13.</p> <p>Once the new songs and videos are issued, multimedia items reassembled to create an updated multimedia item, as shown at: https://support.moodmedia.com/library/harmony-visuals/Harmony-Visual-Basics.pdf at Pg. 13. A user can publish "all channels" or "force update" that will take place after 10 minutes to the media player. A media plyer operates on a plurality of multimedia items, derived from the screen captures from the MOOD MEDIA Template.</p>