

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HULU, LLC,

Petitioner,

v.

PIRANHA MEDIA DISTRIBUTION, LLC,

Patent Owner.

Case No. IPR2025-00082

U.S. Patent No. 10,986,403

PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 10,986,403

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EXHIBIT LIST

Exhibit No.	Description
1001	U.S. Patent No. 10,986,403 to Donian <i>et al.</i> (the '403 patent)
1002	Prosecution History for the '403 patent
1003	Declaration of Dr. Henry Houh
1004	U.S. Pat. App. Pub. No. 2002/0083439 ("Eldering-I")
1005	U.S. Pat. App. Pub. No. 2003/0149975 ("Eldering-II")
1006	U.S. Patent No. 6,262,724 ("Crow")
1007	U.S. Pat. App. Pub. No. 2002/0141582 ("Kocher")
1008	U.S. Patent No. 7,006,760 ("Takagi")
1009	U.S. Patent No. 7,302,160 ("Wells")
1010	U.S. Pat. App. Pub. 2002/0161739 ("Oh")
1011	U.S. Pat. App. Pub. 2001/0042249 ("Knepper")
1012	U.S. Pat. App. Pub. 2003/0154128 ("Liga")
1013	US 2003/0154295 ("Mangold")
1014	U.S. Pat. App. Pub. 2003/0149621 ("Shteyn")
1015	<i>Piranha Media Distribution, LLC v. Hulu, LLC</i> , CDCA-2-24-cv-00498, Dkt. No. 28 (Piranha's Opposition to Hulu's Motion to Dismiss)
1016	<i>Piranha Media Distribution, LLC v. Hulu, LLC</i> , CDCA-2-24-cv-00498, Piranha's Infringement Contentions for the '403 Patent
1017	U.S. Pat. App. Pub. 2002/0002674 ("Grimes")
1018	U.S. Pat. App. Pub. 2003/0079133 ("Breiter")
1019	U.S. Pat. App. Pub. 2001/0047338 ("Jones")
1020	U.S. Patent No. 6,161,142 ("Wolfe")
1021	U.S. Pat. App. Pub. 2002/0120515 ("Morimoto")
1022	U.S. Pat. App. Pub. 2003/0044162 ("Angel")
1023	U.S. Pat. App. Pub. 2001/0049820 ("Barton")
1024	International Standard ISO/IEC 14496-1
1025	U.S. Patent No. 7,739,601 ("Wong")
1026	U.S. Pat. App. Pub. 2001/0047298 ("Moore")

The sponsorship revenue model has long been applied to the provision of media content, where advertisements are inserted in audio/video media such as television programs. The '403 patent does not purport to invent the practice of inserting advertisements but claims to be directed to adaptively selecting and re-sequencing advertisements in response to user playback controls. This concept was known before the '403 patent's priority date.

I. BACKGROUND

By the late 1990s, advertisements were integrated with audio/video media based on content structures, such as being organized into playlists and avails (available slots for ads) in media content. Ex-1003, ¶¶3-4.

The advent of video recording devices such as Personal Video Recorders (PVRs) revolutionized the media content viewing experience in the late 1990s. These devices offered increased flexibility for advertisement insertion, enabling providers to tailor ads to individual users and dynamically control their timing. Advertisers developed various approaches to schedule ads to optimize impact and engagement, such as by matching advertisements with user identity, type of media content, and time of viewing and dynamically adapting advertisement selection to changing conditions. *See, e.g.*, Ex-1010, ¶33; Ex-1011, ¶41, 61; Ex-1012, ¶6; Ex-1004, ¶16, ¶30; Ex-1003, ¶5.

Video recording technologies also enabled viewers to skip commercials, altering the traditional advertising model. In response, providers implemented various measures to counteract ad-skipping. Commonly used techniques included disabling user control such as skipping and fast forwarding during commercial breaks. Ex-1012, ¶10. The techniques also included strategies to provide alternatives in response to user actions skipping advertisements. For example, while a user might be allowed to skip an advertisement, a replacement would be displayed to the user at an alternative time. Types of replacements included the same advertisement, a different advertisement, or an advertisement in another format or state (e.g., overlay or pop-ups, shorter versions). By 2002, various techniques had been developed to select and schedule replacement advertisements. *See, e.g.*, Ex-1014, ¶¶10-11; Ex-1003, ¶6.

II. THE '403 PATENT

A. Overview

The '403 patent “relates generally to the distribution of audio, video, and print media content via digital replication and delivery channels.” Ex-1001, 1:16-25. The '403 patent discusses inserting and displaying advertisements within media content. Ex-1001, 7:37-47; Ex-1003, ¶7.

The '403 patent admits that displaying advertising content within media content was known in the art. Ex-1001, 6:64-7:10; Ex-1003, ¶8. The purportedly

inventive concept of the '403 patent is to adaptively select and re-sequence ads in response to user playback controls. *See* Ex-1001, 7:37-47, 14:63-15:10, 28:48-60. By doing so, the '403 patent claims to ensure ads playing without user interruption and allow users to access free media content in exchange of exposure to ads. *See, e.g.,* Ex-1001, 6:56-63, 8:38-50, 14:29-52, 14:63-15:10; Ex-1003, ¶9. However, the idea of selecting and re-sequencing ads for display and the business model of providing free access to media content were known well before the '403 patent. *Supra* §I; Ex-1001, 8:24-37, 42:34-50; Ex-1003, ¶10.

B. Prosecution History

The '403 patent has a prosecution history spanning 18 years, including multiple Office Actions under §§ 101, 102, 103 and 112. Ex-1002, 000116-126, 000167-179, 000222-237, 000265-278, 000336-349, 000386-404, 000566-574, 000626-643, 000952-958. In the last Office Action with a prior-art rejection, the examiner rejected pending independent claims as obvious over U.S. Pat. App. Pub. No. 2001/0042249 (Knepper) in view of U.S. Patent No. 7,761,327 (Hannah) and U.S. Pat. App. Pub. No. 2002/0191950 (Wang). Ex-1002, 000632. Upon appeal by the Applicant (Ex-1002, 000727-767), the PTAB stated that it did not see where Knepper teaches that “when a user does not follow the pre-set order of the playlist, by skipping media files in the sequence, the order of the play list changes [and] the position of the ad file also changes within the playlist” and “adaptively modifying

or re-sequencing the presentation position in response to user input[.]” Ex-1002, 000895-96; Ex-1003, ¶11. As explained below, Ground 1 provides the teachings that the PTAB found to be lacking in Knepper.

C. Priority Date

The ‘403 patent was filed on June 26, 2003 and claims priority to U.S. Provisional Patent Application Nos. 60/393,193 and 60/392,232, both filed on June 27, 2002. This Petition analyzes obviousness as of June 27, 2002, and all relied-upon art predates this date. Ex-1003, ¶12.

III. LEVEL OF ORDINARY SKILL IN THE ART

The field of the ’403 patent is media display. *See, e.g.*, Ex-1001, Abstract, 1:16-25; Ex-1003, ¶14. A POSITA at the time of the alleged invention of the ’403 patent would have been a person with a bachelor’s degree in electrical engineering, computer science, or a similar field with at least two years of experience in media display or a person with a master’s degree in electrical engineering, computer science, or a similar field with a specialization in media display. Additional experience can substitute for the level of education, and vice-versa. Ex-1003, ¶¶15-17.

IV. CLAIM CONSTRUCTION

A. “intersplicer”

A POSITA would have understood “intersplicer” to mean “software that selects advertising content and controls insertion and conveyance of advertising

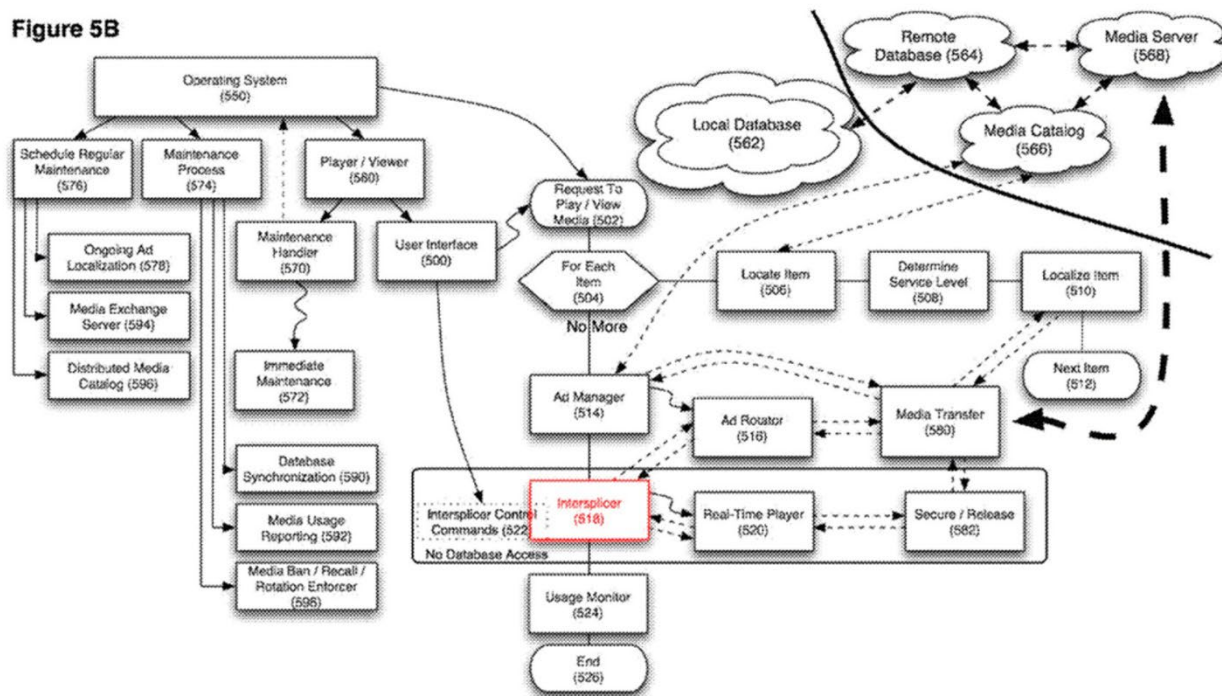
content in media content.” Ex-1003, ¶20. Claims of the ’403 patent recite that the intersplicer controls the insertion and conveyance of advertising content in media content, including, for example, “controlling one or more insertion points of the digital advertising content into the digital media content thereby sequencing the digital media content and the digital advertising content” and “adaptively select[ing]” “the one or more alternatively sequenced insertion points[.]” Ex-1001, cl. 1.; Ex-1003, ¶21. This interpretation is confirmed by the specification of the ’403 patent, which states that the intersplicer “select[s] ... the ads to be shown” and controls the insertion and conveyance of ads by, for example, “automatically edits the selected advertisements into the presentation stream.” Ex-1001, 7:37-47; *see also, e.g.*, Abstract, 14:63-15:10; Ex-1003, ¶22.

In the district court litigation, Patent Owner proposed to construe “intersplicer” as “digital rights management software that enforces the conveyance of advertisements inserted into a digital media stream for presentation during the course of media playback to allow for free, unlimited viewing of requested digital media through a general licensing process that is transparent to the user.” Ex-1015, 000006, 000012-13. This construction is incorrect because it imports unsupported limitations. Ex-1003, ¶23.

First, the claims do not recite that the intersplicer is “digital rights management software” or that the intersplicer “allow[s] for free, unlimited viewing

of requested digital media through a general licensing process that is transparent to the user.” *Id.*; Ex-1001, 44:2-50:19; Ex-1003, ¶23.

According to the specification, the intersplicer is just one of many components of the player/viewer software. Ex-1001, 22:15-29, 23:35-46, Fig. 5A, 24:20-25, Fig. 5B:



The real-time player module, rather than intersplicer, provides digital rights management functionalities. Ex-1001, 14:53-62; Ex-1003, ¶24. The specification is not limited to providing free, unlimited viewing because it discloses a purchased service level with advertisements. *E.g.*, Ex-1001, 26:65-27:13; Ex-1003, ¶25.

Patent Owner’s proposed construction is also inconsistent with its characterization of “intersplicer” in the Infringement Contentions. Ex-1016, 000019-28; Ex-1003, ¶26.

V. IDENTIFICATION OF CHALLENGE

Petitioner requests *inter partes* review and cancellation of the challenged claims on the following grounds:

Ground	Claims	Statutory Basis	Prior Art
1	1, 2, 4–11, 13– 15, 17– 19, 21–23	§ 103	Eldering-I in view of Eldering-II
2	2, 15	§ 103	Eldering-I in view of Eldering-II and Crow
3	13	§ 103	Eldering-I in view of Eldering-II and Kocher

The Grounds render the challenged claims obvious because any differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a POSITA to which the subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007).

A. Ground 1

1. Eldering-I (Ex-1004)

Eldering-I is prior art under pre-AIA §102(e) because it was filed before June 27, 2002. Ex-1003, ¶31.

Eldering-I “pertains to targeted advertising” and teaches “[a] system for inserting advertisement into channels of media programming[.]” Ex-1004, Abstract, ¶3, ¶¶25-27, ¶70, Fig. 1, Fig. 2:

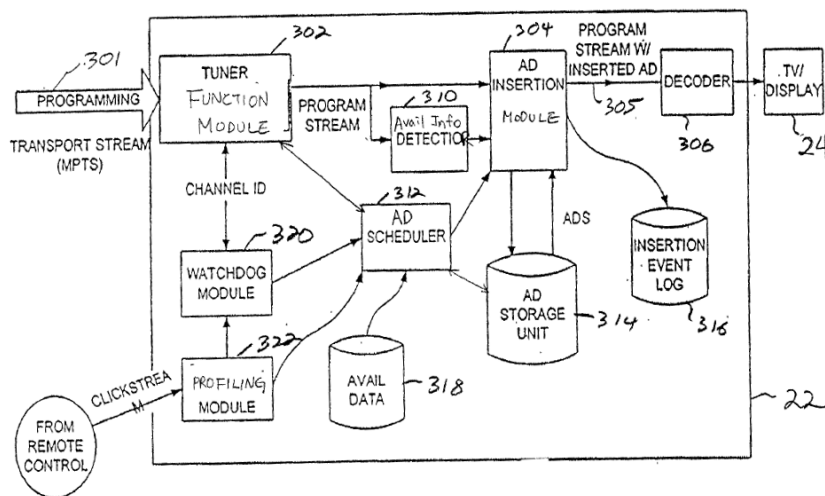


Figure 2

Eldering-I applies its teachings to streaming and recorded programming, such as video-on-demand. *E.g.*, Ex-1004, ¶¶70-72, ¶27; Ex-1003, ¶32.

Eldering-I teaches an ad scheduler that selects advertisements and schedules insertion of advertisements. *E.g.*, Ex-1004, Abstract, ¶44, ¶¶49-50, Fig. 2. The ad scheduler re-selects and reschedules advertisements in real time when there are changes to viewing parameters such as channel selection, viewer identity, and the type of program being watched. *E.g.*, Ex-1004, ¶16, ¶30, ¶32, ¶¶76-82; Ex-1003, ¶¶33-34.

Eldering-I is in the same field of endeavor as the '403 patent (media display). *See supra* §III; *e.g.*, Ex-1004, ¶3, ¶17; Ex-1003, ¶35.

2. Eldering-II (Ex-1005)

Eldering-II is prior art under at least pre-AIA §102(e) because it was filed before June 27, 2002. Ex-1003, ¶37.

Eldering-II teaches “[s]electing targeted advertisements to be presented to subscribers along with selected video in a video on demand (VoD) system.” Ex-1005, Abstract, ¶52; Ex-1003, ¶38. A user interface is implemented through a set top box capable of receiving user inputs. Ex-1005, ¶54, ¶74, ¶¶109-110, Fig. 5:

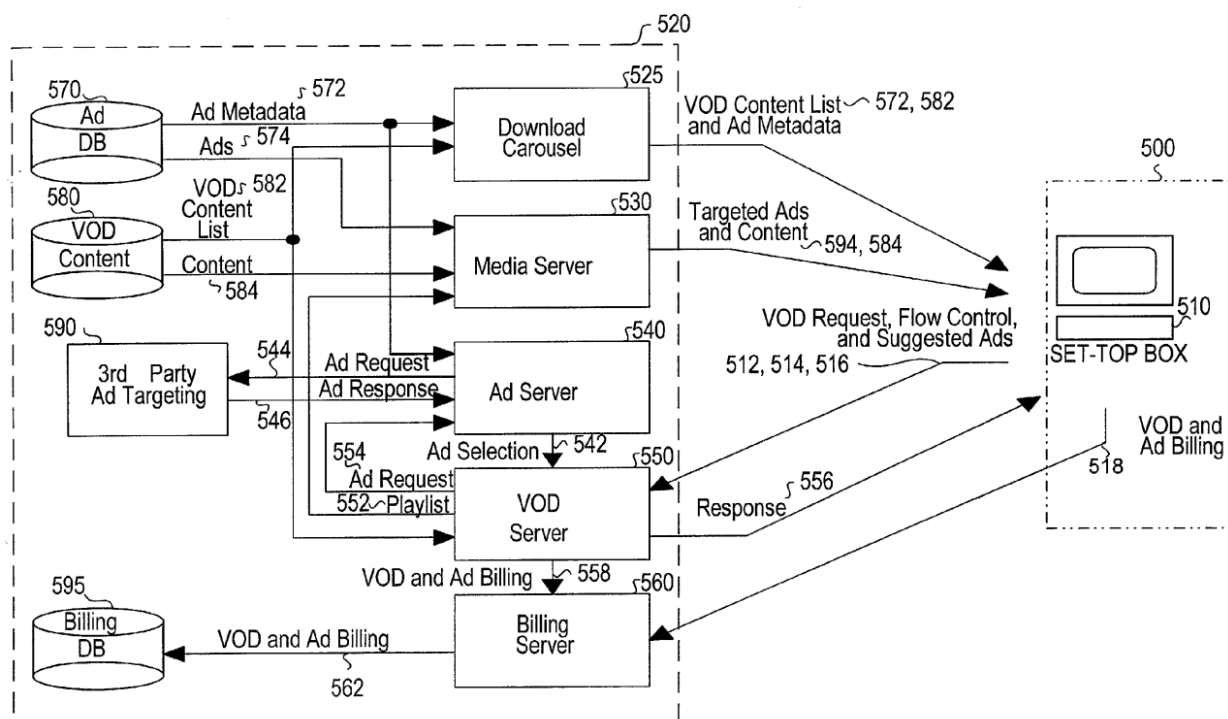


FIG. 5

Ex-1003, ¶39. Eldering-II teaches disabling navigation control functions or displaying an alternative advertisement when a user fast forwards or skips an

existing advertisement. *E.g.*, Ex-1005, Abstract, ¶58, ¶¶69-70, ¶110, ¶138, ¶¶165-179, Figs. 9-10; Ex-1003, ¶40.

Eldering-II is in the same field of endeavor as the '403 patent (media display). *See supra* §III; *e.g.*, Ex-1005, Abstract; Ex-1003, ¶41.

3. Independent Claims 1, 17, 21, 22

[1a] A digital media player device for controlling digital media presentations, the digital media player device comprising:

[17a] A computer-implemented system for controlling digital media presentations, the system comprising:

[21a]/[22a] A computer-implemented method for controlling digital media presentations using an improved digital media player system, the method comprising:

Ground 1 teaches the preambles. Ex-1003, ¶¶42-46.

Eldering-I teaches **a digital media player device/a computer-implemented system** (e.g., subscriber system)¹ ([1a]/[17a]) that provides digital media content to users. Ex-1004, ¶¶25-26 (“A ‘*subscriber system*’ is a system at the subscriber’s end which receives, processes, and/or displays media signals (e.g., TV Programs) including advertisement signals. Examples of the subscriber system may include, but are not limited to, an entertainment system (e.g., TV, VCR, personal video

¹ To the extent Patent Owner argues that “a digital media player device” excludes, for example, a TV coupled to a set top box, it is satisfied by a set top box with PVR functionalities, which provides the core functions of the subscriber system. Ex-1004, ¶8. As used herein, “subscriber system” refers to the subscriber system as well as its core component, a set top box with PVR functionalities.

recorder (PVR), etc.) including or coupled to a set top box or the like, a personal computer, or a computer work station.”),² ¶¶5-8, ¶¶29-30, ¶¶33-37, ¶39, ¶47, Fig.1:

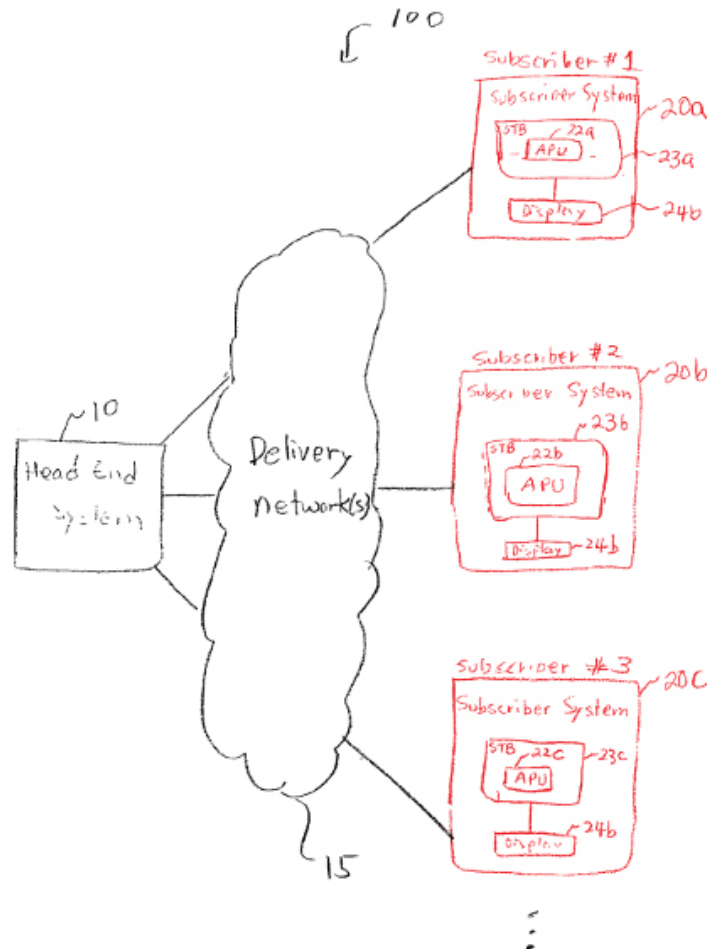


FIGURE 1

Ex-1003, ¶43.

² All annotations/emphasis added unless otherwise noted.

Eldering-I's subscriber system **controls digital media presentations** based on user inputs such as "a volume control and/or channel change control." Ex-1004, ¶32, ¶36, ¶38, ¶59, ¶61, Fig. 1. Ex-1003, ¶44.

Operations of Eldering-I's subscriber system, as modified based on Eldering-II's teachings, teach steps of **a computer-implemented method for controlling digital media presentations using an improved digital media player system**. *Infra* §V.A.3[21b-1]/[22b-1]; e.g., Ex-1004, ¶¶9-10, ¶11, ¶12 ("a method ... for rescheduling advertisements to be inserted into television program channels when a change in one or more of certain viewing parameters (e.g., channel selection, viewer identity, etc.) occurs."), ¶¶13-18; Ex-1003, ¶45.

[1b] one or more processors for receiving data comprising digital media content and digital advertising content; [17b] one or more processors; [21b] receiving, on a digital media player system, data comprising digital media content and digital advertising content, [22b] transmitting, by at least one remote system to a digital media player system, data comprising digital media content and digital advertising content,

Eldering-I's subscriber system receives media signals from a remote head end system via a network. Ex-1004, ¶25, ¶26, ¶37 ("The subscriber systems 20 receive the media signals from the head end system 10, select and process one or more channels and display them to the subscribers."). Ex-1003, ¶47.

The media signals include “video signals including TV programming streams and/or advertisement signals.” Ex-1004, ¶36. Eldering-I teaches the content being digital. Ex-1004, ¶26, ¶¶5-8, ¶35, ¶39, ¶47; Ex-1003, ¶48. Thus, Eldering-I teaches **receiving, on a digital media player system** (e.g., subscriber system), **data comprising digital media content and digital advertising content** (e.g., TV/recorded programming streams and advertisement signals) ([21b]) and **transmitting, by at least one remote system** (e.g., head end system) **to a digital media player system, data comprising digital media content and digital advertising content** ([22b]).

Eldering-I teaches that the subscriber system comprises **one or more processors** ([1b], [17b]). Ex-1004, ¶¶42-43 (“a television set-top including *a microprocessor*”), ¶62; Ex-1003, ¶49.

The one or more processors are **for receiving data comprising digital media content and digital advertising content** ([1b]) because they execute subscriber system functionalities that includes receiving digital media content and digital advertising content. *E.g.*, Ex-1004, ¶26 (“A ‘subscriber system’ is a system at the subscriber’s end which *receives, processes, and/or displays media signals (e.g., TV Programs) including advertisement signals.*”), ¶¶42-43, ¶62, Figs. 1-2; Ex-1003, ¶50.

Eldering-I teaches limitations [1b], [17b], [21b], and [22b]. Ex-1003, ¶¶47-51.

[1c]/[17c] a user interface [input] for allowing a user to control a course of presentation of the digital media content [received];

[21c]/[22c] the digital media player system having a user interface and an intersplicer, the user interface configured to allow a user to control a course of presentation of the digital media content received,

Eldering-I teaches that its subscriber system includes a user interface (input) ([1c], [17c], [21c], [22c]) implemented through a set top box. Ex-1004, ¶37 (“Each of the set top boxes 23 ... include ... *a user interface*[.]”), ¶25, ¶34, Fig. 1.

Eldering-II similarly teaches a user interface implemented with a set top box. *E.g.*, Ex-1005, ¶74, ¶75, Fig. 1; Ex-1003, ¶52.

Eldering-I’s user interface input is **for allowing a user to control a course of presentation of the digital media content received** because, as explained above, Eldering-I teaches user input causing the subscriber system to perform operations such as volume and channel change. *See supra* §V.A.3[1a]; *e.g.*, Ex-1004, ¶32, ¶36, ¶38, ¶59, ¶61, Fig. 1; Ex-1003, ¶53.

Eldering-II teaches additional user input for skipping, fast forwarding, rewinding, pausing, and stopping playback of digital media content. *E.g.*, Ex-1005, ¶109, ¶110 (“the fast-forward and skip functions...”). These operations control a course of presentation of digital media content (*e.g.*, “flow of content”), for

example, by bypassing portions of the digital media content and changing its play position. Ex-1005, ¶109; Ex-1003, ¶54.

Eldering-I teaches implementing its subscriber system with a set-top box having PVR functionalities and contemplates using it for providing video-on-demand (VOD) services. Ex-1004, ¶8 (“In digital set-top boxes with local storage, also known as Personal Video Recorders or PVRs...”), ¶72 (“The present invention can also be utilized in Video on Demand (VoD) systems[.]”) ¶¶25-27, ¶¶70-71; Ex-1003, ¶55. Well-known control functionalities such as skipping and fast forwarding were commonly implemented on devices such as set top boxes with PVR functionalities. Ex-1005, ¶54, ¶109 (“VoD systems allow a subscriber to use VCR functions (i.e., rewind, pause, fast-forward, stop the playback) while viewing an on-demand program.”). A POSITA would have understood that Eldering-I contemplates that its set top box/PVR includes common user control functionalities and it would have been obvious to implement these functionalities on Eldering-I’s subscriber system to improve users’ flexibility in controlling the presentation of the media content. Since Eldering-I and Eldering-II teach the same types of devices (e.g., set top box with PVR functionalities), a POSITA would have had a reasonable expectation of success when implementing Eldering-II’s teachings to Eldering-I. Ex-1003, ¶56.

As explained below, the combination of Eldering-I and Eldering-II further teaches **an intersplicer** ([21c], [22c]). *Infra* §V.A.3[1d]/[17d]/[21d]/[22d].

Therefore, the combination of Eldering-I and Eldering-II teaches limitations [1c], [17c], [21c], and [22c]. Ex-1003, ¶57.

[1d]/[17d] an intersplicer for controlling one or more insertion points of [the] digital advertising content into the digital media content thereby sequencing the digital media content and [the] digital advertising content, the sequencing comprising ordering one or more data blocks of the digital media content and one or more data blocks of the digital advertising content into a content stream playable as audio or visual content perceivable by the user, the content stream comprising one or more initially sequenced insertion points at which the digital advertising content is scheduled to be presented relative to the digital media content during play;

[21d] and the intersplicer configured to control one or more initially sequenced insertion points of the digital advertising content into the digital media content;

[22d] and the intersplicer for controlling one or more insertion points of the digital advertising content into the digital media content;

[21e]/[22e] sequencing the digital media content, using the intersplicer, the sequencing comprising ordering one or more data blocks of the digital media content into a content stream playable as audio or visual content perceivable by the user, the content stream comprising a media section that comprises at least some of the digital media content, the content stream further comprising an advertising block within which at least some of the digital advertising content is scheduled to be presented [during play], the advertising block being arranged within the content stream at an initially defined insertion position relative to the media section [during play];

The combination teaches these limitations. Ex-1003, ¶¶58-71.

Eldering-I teaches an intersplicer (e.g., ad scheduler) that controls insertion and conveyance of advertising content in media content. Ex-1004, ¶42 (“As shown in FIG. 2, the APU 22 may include ... an ad scheduler 312[.]”), Fig. 2:

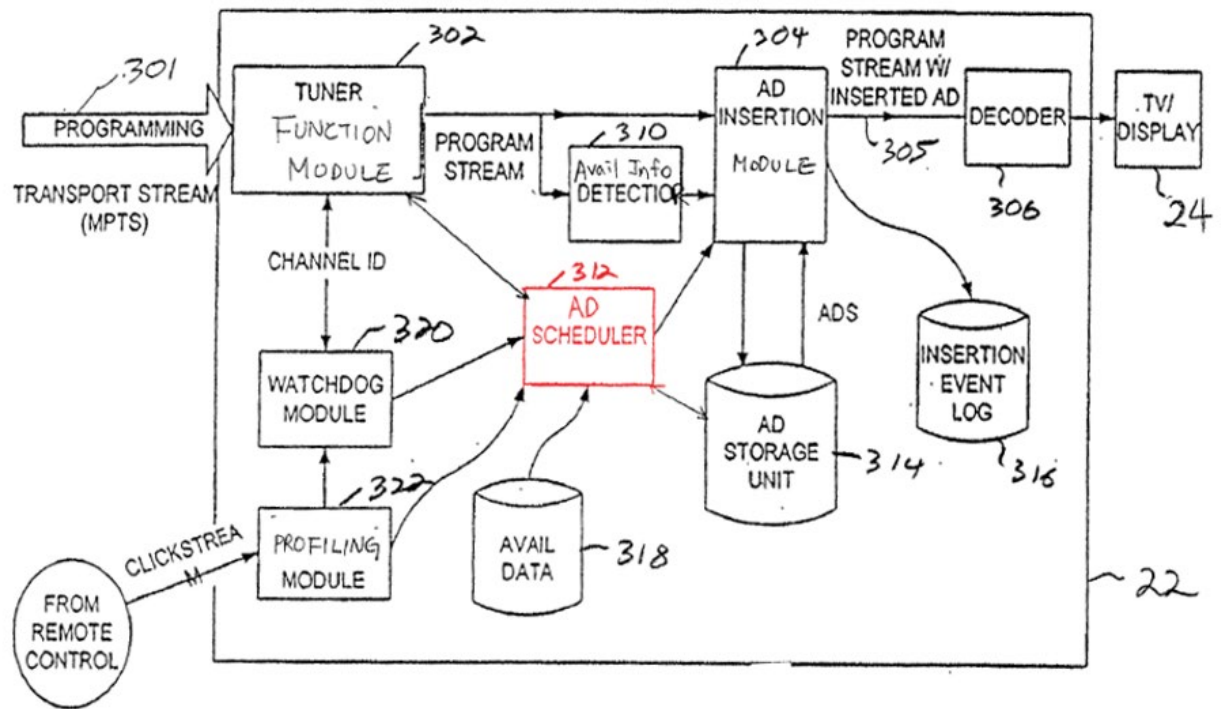


Figure 2

Ex-1003, ¶59.

The ad scheduler selects advertisements and schedules insertion of advertisements by creating an ad insertion schedule. Ex-1004, ¶44, ¶49 (“The ad scheduler 312 provides a schedule of ads to be inserted in the form of a queue or other forms.”), Abstract, ¶11; Ex-1003, ¶60.

The ad insertion schedule includes “an ordered list of ARLs (advertisement resource locators)” respectively corresponding to the scheduled advertisements.

Ex-1004, ¶29, ¶¶34-35, ¶49, ¶66, Fig. 3:

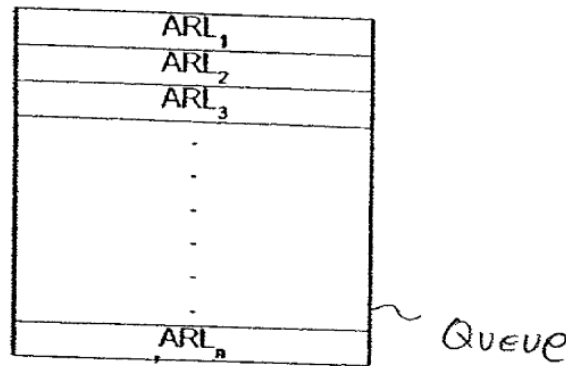


Figure 3

Ex-1003, ¶61.

Eldering-I’s ad scheduler selects advertisements and determines an initial ad insertion schedule. Ex-1004, Abstract, ¶15, ¶29 (“An ad processing unit of the subscriber system can determine in advance which ads are to be inserted and in what order based on scheduling instructions from the head end system, or predetermined ad ordering and selection algorithms.”), ¶50, ¶15, ¶63, Figs. 3-4;

Ex-1003, ¶62.

According to the ad insertion schedule, advertisements are inserted into avails in digital media content and displayed. Ex-1004, Abstract, ¶15 (“The ad processing unit then inserts the ads in the avails as they arrive.”), ¶17 (“The set top

box inserts the ads into the incoming programming channel according to the ad insertion schedule, and displays the programming channel with the inserted advertisements on the display device.”), ¶¶33, ¶¶46-47; Ex-1003, ¶63. Avails are intervals for inserting advertisements that each corresponds to a position or location within media content. Ex-1004, ¶¶28-29, ¶44, ¶46; Ex-1003, ¶64.

Eldering-I’s ad scheduler teaches an **intersplicer** because it selects advertising content and controls insertion and conveyance of advertising content in media content by scheduling and rescheduling advertisements. *Supra* §IV.A. Eldering-I’s ad scheduler **controls one or more insertion points** (e.g., one or more avails corresponding to one or more advertisements’ positions in the ad insertion schedule) **of the digital advertising content** (e.g., advertisements) **into the digital media content** (e.g., TV programming, recorded programming) ([1d], [17d], [22d]). Ex-1003, ¶65.

Creating the initial ad insertion schedule causes digital media content and digital advertising content to be sequenced into **a content stream** (e.g., TV programming or recorded programming with advertisements) **that comprises one or more initially sequenced insertion points** (e.g., one or more avails corresponding to one or more advertisements’ original positions in the ad insertion schedule) **at which the digital advertising content is scheduled to be presented relative to the digital media content during play** ([1d], [17d], [21e], [22e]). Ex-1004,

Abstract, ¶15, ¶29, ¶¶46-47, ¶50, ¶63, ¶72, Figs. 3-4. Here, the ad scheduler is **configured to control one or more initially sequenced insertion points of the digital advertising content into the digital media content** ([21d]). Ex-1003, ¶66.

Avails in Eldering-I's content stream divides the stream into media sections (e.g., portions of the media content between two avails) and advertisement blocks (e.g., advertising content inserted in avails). Ex-1004, ¶15, ¶29, ¶¶46-47, ¶63, Fig. 4:

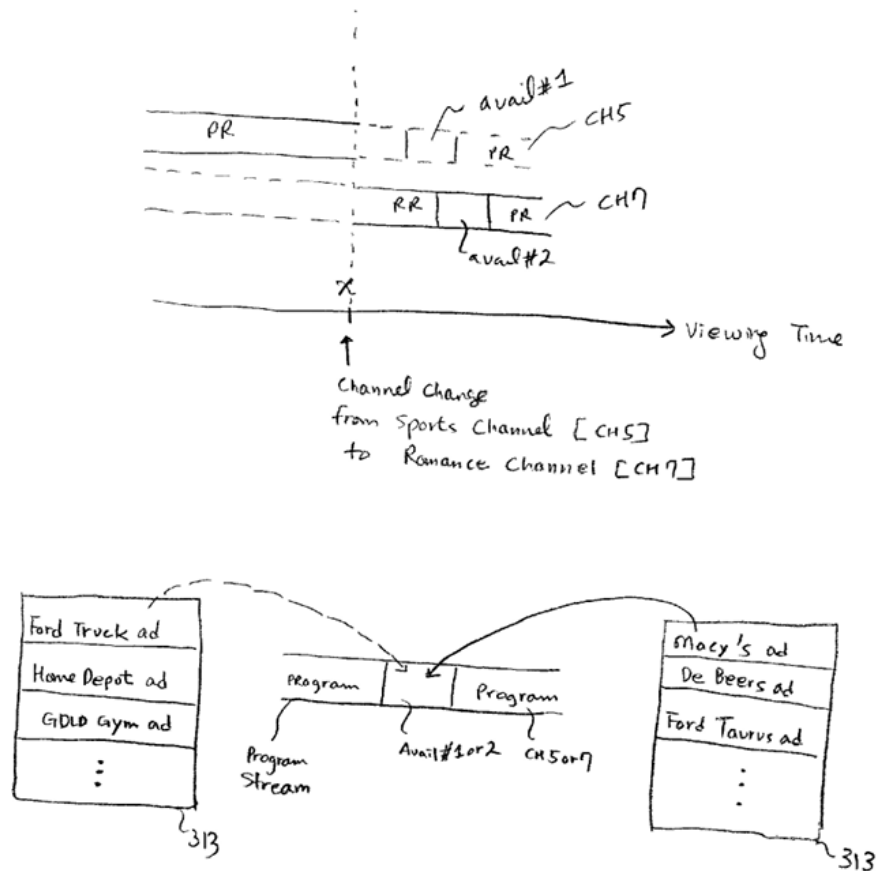


FIGURE 4

The ad scheduler **sequences the digital media content and the digital advertising content** ([1d], [17d], [21e], [22e]) **by ordering one or more data blocks of the digital media content and one or more data blocks of the digital advertising content into a content stream** ([1d], [17d], [21e], [22e]).³ Elderling-I teaches that **the content stream comprises a media section that comprises at least some of the digital media content, the content stream further comprising an advertising block within which at least some of the digital advertising content is scheduled to be presented during play, the advertising block being arranged within the content stream at an initially defined insertion position relative to the media section during play** ([21e], [22e]). Ex-1003, ¶67.

This content stream is **playable as audio or visual content perceivable by the user**. *E.g.*, Ex-1004, ¶¶25-27; Ex-1003, ¶68.

The combination of Elderling-I and Elderling-II teaches “intersplicer” even under Patent Owner’s proposed claim construction. *Supra* §IV.A; Ex-1015, 000006, 000012. Ex-1003, ¶69.

First, Elderling-I’s ad scheduler **enforces the conveyance of advertisements** by scheduling their insertion into a digital media stream based on rules. *E.g.*, Ex-

³ Digital media content in video or audio form was conventionally encoded and distributed in terms of data blocks. *See, e.g.*, Ex-1008, 1:34-; Ex-1009, 5:54-65. Elderling-I and Elderling-II both teach communicating media and advertising content using conventional data formats, such as MPEG, that include data blocks. Ex-1004, ¶26; Ex-1005, ¶82, ¶161, ¶¶168-172, ¶182, Figs. 7, 11A-11C.

1004, Abstract, ¶16, ¶30, ¶32, ¶44, ¶¶49-52, ¶¶56-61, ¶¶63-64, ¶75, ¶¶76-82; *infra* §V.A.3[1f]/[17f]/[21g]/[22g]; Ex-1003, ¶70. Eldering-II further teaches **enforcing the conveyance of advertisements** by disabling the user's ability to fast forward through or skip over them. Ex-1005, Abstract, ¶58, ¶110. ¶165; *infra* V.A.3[1i]/[17i]/[21k-l]/[22k-l]; Ex-1003, ¶71.

Second, Eldering-I's control over when media content, rather than advertisements, is presented and Eldering-II's limit on user's ability to skip advertisements teaches **digital rights management software**. *E.g.*, Ex-1004, ¶44, ¶¶49-52; Ex-1005, ¶58, ¶110, ¶165; Ex-1003, ¶72. It would also have been obvious to implement widely known digital rights management functionalities with Eldering-I and Eldering-II. *Infra* §V.A.11; *see* Ex-1017; Ex-1018; *e.g.*, Ex-1004, ¶25; Ex-1003, ¶73.

Finally, in the 2002 timeframe, digital media content was commonly made available to the public on the Internet for free, unlimited use with the help of advertisement revenue. Ex-1019, ¶¶13-14; Ex-1020, 1:57-65; Ex-1021, ¶11; *see* Ex-1001, 1:60-2:10; Ex-1003, ¶74. By allowing the user to use well-known and conventional control functionalities (*e.g.*, Ex-1005, ¶109; *supra* §V.A.3[1c]/[17c]/[21c]/[22c]), the combination allows **for free, unlimited viewing of requested digital media through a general licensing process that is**

transparent to the user as long as it is used by a content provider that does not charge a fee or hide the licensing terms from users. Ex-1003, ¶75.

[1e]/[17e] in response to user input updating a current play position in the content stream to a new play position in the content stream, the one or more processors using one or more adaptive preference rules to adaptively modify[,] a presentation position of the digital advertising content from at least one of the one or more initially sequenced insertion points to one or more alternatively sequenced insertion points [in the digital media content], [at least one of the one or more alternatively sequenced insertion points being different than the one or more initially sequenced insertion points relative to the digital media content within the content stream];

[21f]/[22f] adaptively re-sequencing the content stream into a modified content stream to reflect a user input comprising updating a current play position to a new play position in the digital media content detected at the digital media player system, the modified content stream comprising an alternate insertion position of the advertising block relative to the media section, the adaptively re-sequencing comprising determining the alternate insertion position using one or more adaptive preference placement rules associated with the digital media content [during play];

First, the combination teaches changing the insertion points/positions of advertising content in response to user input (e.g., skipping, fast forwarding). Elderling-I teaches rescheduling advertisements in response to changes to viewing parameters. Ex-1004, Abstract, ¶16 (“Changes in one or more of certain viewing parameters may warrant a change in the ad insertion schedule since the currently scheduled ads may not be appropriate in view of the change in the viewing parameters.”), ¶18, ¶30, ¶32, ¶¶51-52, ¶¶56-61, ¶63, ¶75, ¶82, Fig. 4; Ex-1003, ¶¶77-78. Elderling-I contemplates a broad range of viewing parameters, such as

type of program being watched, characteristics of the next avail, identity of the current viewer, and the time of day. Ex-1004, ¶16, ¶30 (“Such viewing parameters may include ... the channel selections made by the current viewer, the identity of the current viewer, the type of program being watched by the current viewer, and the size of the next avail in the current programming channel.”), ¶51, ¶75; Ex-1003, ¶79.

The rescheduling modifies advertisements’ positions in the queue (e.g., moving an advertisement to the top of the queue, moving the next ad in the queue down). *E.g.*, Ex-1004, ¶53 (“In such a case, the ad schedule may be changed so that another ad, which is more appropriate to the new viewer, is moved to the top of the queue for insertion.”), ¶54 (“[I]f the next ad at the top of the queue is for display during a football game on ESPN, this ad may not be most appropriate if the channel is suddenly switched to the Martha Stewart Show on PBS. At this time, the ad schedule change may be needed...”). Eldering-I teaches doing so by reordering ARLs of advertisements in the queue. Ex-1004, ¶56 (“The rescheduling of advertisements (i.e., changing the ad insertion schedule) in the queue may encompass reordering the entire list of ARLs, or selectively changing the first or few items on the queue list, which may vary depending on the application.”), ¶77; Ex-1003, ¶80. For example, by way of the reordering, an advertisement is moved from an avail corresponding an original lower position in the queue (i.e., an initial

insertion point) to an avail corresponding to the top of the queue (i.e., updated insertion point). Ex-1003, ¶81.

Eldering-I teaches performing rescheduling on a “continuous[],” “on-going,” and “real-time” basis. Ex-1004, ¶32, ¶52, ¶55, ¶58, ¶63, ¶75; Ex-1003, ¶82. In this way, Eldering-I teaches **adaptively modifying a presentation position of the digital advertising content from at least one of the one or more initially sequenced insertion points** (e.g., avail corresponding to an advertisement’s original position in the ad insertion schedule) **to one or more alternatively sequenced insertion points** (i.e., avail corresponding to the advertisement’s new position in the ad insertion schedule) **in the digital media content** ([1e], [17e]). Given the changing positions of an advertisement in the ad insertion schedule and different avails corresponding to the changing positions, Eldering-I teaches that **at least one of the one or more alternatively sequenced insertion points is different than the one or more initially sequenced insertion points relative to the digital media content within the content stream** ([1e]). By modifying the ad insertion schedule based on changes to viewing parameters, Eldering-I teaches **adaptively re-sequences the content stream** (e.g., original content stream) **into a modified content stream** (e.g., content stream with rescheduled advertisements inserted), **where the modified content stream comprises an alternate insertion position of the advertising block** (i.e., avail corresponding to advertisement’s new

position in the ad insertion schedule) **relative to the media section** ([21f]/[22f]).

Ex-1003, ¶83.

Second, the combination teaches **user input** (e.g., skip, fast forward) **detected at the digital media player system that updates a current play position to a new play position in the stream of digital media content** ([1e], [17e], [21f], [22f]). *Supra* §V.A.3[1c]/[17c]/[21c]/[22c]; e.g., Ex-1004, ¶8, ¶¶25-27, ¶¶70-72; e.g., Ex-1005, ¶54, ¶109, ¶110. These control functionalities allow the user to fast forward through or skip over advertisements. Ex-1005, ¶58 (“[W]hen the subscriber attempts to skip or fast forward the ad ...”), ¶110, ¶112, ¶124, ¶165; Ex-1003, ¶84.

Skipping over or fast forwarding through part of a content stream updates the play position from a position preceding the bypassed portion to a position subsequent to the bypassed portion. *See, e.g.*, Ex-1014, ¶19, ¶21; Ex-1023, ¶34, ¶36, Fig. 5; Ex-1022, ¶¶10-15, Fig. 1. The updating of the play position occurs when at least part of an advertisement is bypassed. *See, e.g.*, Ex-1014, ¶21; Ex-1023, ¶34, ¶36, Fig. 5; Ex-1003, ¶85.

As it was obvious for Eldering-I’s device/system to accept user inputs such as skip and fast forward (*supra* §V.A.3[1c]/[17c]/[21c]/[22c]), a POSITA would have further found it obvious and been motivated to reschedule advertisements in response to user inputs such as skip and fast forward because, as explained below,

such user inputs change viewing parameters. The combination thus teaches adaptively modifying a presentation position of the digital advertising content **in response to user input** updating a current play position in the content stream ([1e], [17e]) and adaptively re-sequencing the content stream into a modified content stream **to reflect user input** ([21f], [22f]). Ex-1003, ¶86.

A POSITA would have understood that a user input such as skip or fast forward changes the viewing parameters. For example, when different sections of a digital media stream include different types of programs, skipping or fast forwarding may change the type of program viewed (e.g., from sports to news). *E.g.*, Ex-1004, ¶51 Ex-1003, ¶87. As another example, when a skip or fast forward input bypasses advertisements (e.g., Ex-1005, ¶58, ¶110, ¶112, ¶124, ¶165), the input causes avail(s) to be bypassed and upcoming avails to have different characteristics (e.g., size). *E.g.*, Ex-1005, ¶148, ¶¶162-164, ¶178, ¶182; Ex-1004, ¶30; Ex-1003, ¶88. As yet another example, user control inputs pertain to a user's viewing habits and may signal a change of user identity. Ex-1004, ¶61 (“By prestoring viewing habits of each viewer in the subscriber household and analyzing the currently receiving viewing habits of the viewer with the prestored viewing habits, the current viewer may be identified.”); Ex-1003, ¶89.

Because user inputs change viewing parameters such as program type, avail characteristics, and user identity, a POSITA would have found it obvious and been

motivated to apply Eldering-II's teachings to Eldering-I, such that advertisements are rescheduled based on these user inputs. Ex-1004, ¶16 ("Changes in one or more of certain viewing parameters may warrant a change in the ad insertion schedule since the currently scheduled ads may not be appropriate in view of the change in the viewing parameters."), ¶32, ¶52, ¶82; Ex-1003, ¶¶90-91. The obviousness of doing so is confirmed by Eldering-I's teaching that "any change in one of the viewing parameters or multiple changes in a combination of the viewing parameters may trigger rescheduling of advertisements[.]" Ex-1004, ¶56. The resulting content sequence in the content stream reflects the user input. This would have advanced Eldering-I's goal of ensuring that appropriate advertisements are scheduled and displayed. Ex-1003, ¶92.

Rescheduling advertisements based on user inputs of skipping or fast forwarding does not change the principle of operation of either reference because Eldering-I uses open-ended language in discussing the conditions that trigger the rescheduling of advertisements (Ex-1004, ¶16, ¶30, ¶51, ¶75) and contemplates changes to conditions resulting from user inputs. Eldering-II teaches displaying an alternative advertisement when a user fast forwards through or skips over an original advertisement. Ex-1005, Abstract, ¶58, ¶110. This is consistent with rescheduling advertisements in response to such inputs. Ex-1003, ¶93.

Triggering advertisement rescheduling based on fast forwarding or skipping inputs would have been well within the knowledge and skills of a POSITA. *Supra* §III. Doing so would have been simply combining prior art elements (e.g., Eldering-I's rescheduling advertisements, Eldering-II's skipping and fast forwarding inputs) according to known methods (e.g., triggering rescheduling of advertisements based on changes to viewing parameters) to yield predictable results (e.g., rescheduling advertisements in response to skipping or fast forwarding inputs). Since Eldering-I teaches rescheduling advertisements based on certain inputs (e.g., channel change), implementing the system according to the combination of Eldering-I and Eldering-II involves a simple substitution of one known element (e.g., channel change input) for another (e.g., skipping or fast forwarding input) to obtain predictable results. A POSITA would have had a reasonable expectation of success in implementing a system based on the combination of Eldering-I and Eldering-II. Ex-1003, ¶94. The obviousness to combine Eldering-I and Eldering-II is further confirmed by Eldering-II's incorporation of Eldering-I, their shared inventor, and their similarities. Ex-1004, 00001; Ex-1005, 00001, ¶2, ¶32; Ex-1003, ¶95.

The combination further teaches or suggests that the operation of adaptively modifying a presentation position of digital advertising content is performed by **one or more processors** executing software instructions ([1e], [17e]) in light of

Eldering-I's architecture. *Supra* §V.A.3[1b]; Ex-1004, ¶26, ¶¶42-43, ¶62, Figs. 1-2; Ex-1003, ¶96.

As explained below, the combination teaches **using one or more adaptive preference rules to adaptively modify a presentation position of the digital advertising content ([1e], [17e]) and that the adaptively re-sequencing comprises determining the alternate insertion position using one or more adaptive preference placement rules associated with the digital media content during play⁴ ([21f], [22f]).** *See infra* §V.A.3[1f]/[17f]/[21g]/[22g]; Ex-1003, ¶97.

The combination therefore teaches limitations [1e], [17e], [21f], and [22f]. Ex-1003, ¶¶72-98.

[1f]/[17f]/[21g]/[22g] [the one or more alternatively sequenced insertion points/the alternate insertion position] being adaptively selectable by the intersplicer according to selection criteria defined by the one or more adaptive preference [placement] rules taking into account the new play position and at least one of a length of time associated with playing the digital media content[,] [and] a number of digital media data blocks of the digital media content to be played, [and a point in time the digital media content is to be played,]

Eldering-I teaches **the one or more alternatively sequenced insertion points/alternate insertion position being adaptively selectable by the**

⁴ The combination of Eldering-I and Eldering-II teaches that the alternate insertion position is determined “during play” because the advertising content is rescheduled “on a on-going, real-time basis” based on user input controlling a course of presentation of the media content. *E.g.*, Ex-1004, ¶32, ¶52, ¶55, ¶58, ¶63, ¶75.

intersplicer according to selection criteria (e.g., criteria based on linked-sponsorship parameters) **defined by the one or more adaptive preference rules**⁵ (e.g., rules of the hybrid orthogonal-linked sponsorship model) ([1f], [17f], [21g], [22g]). Ex-1003, ¶100.

Eldering-I teaches adaptively selecting and scheduling advertisements to present for each avail based on a hybrid orthogonal-linked sponsorship model, taking into account viewing parameters such as viewer identity and type of program (*supra* §§V.A.3[1d-e]/[17d-e]/[21d-f]/[22d-f]; Ex-1004, Abstract, ¶16, ¶30, ¶32, ¶¶51-52, ¶¶56-61, ¶¶63-64, ¶75; Ex-1003, ¶101). Ex-1004, ¶¶76-82.

Eldering-I explains that its system enables combining an orthogonal sponsorship model, that “allows targeted ads to be delivered to appropriate viewers” “with the traditional linked sponsorship model to create hybrid orthogonal-linked sponsorship models.” Ex-1004, ¶5, ¶76; Ex-1003, ¶102.

The hybrid orthogonal-linked sponsorship incorporates linked sponsorship parameters into the queue of advertisements:

In hybrid orthogonal-linked sponsorship models, the orthogonal sponsorship based queue can be provided with one or more linked sponsorship parameters. Some of these parameters may identify, e.g., time dependence (signifying a specific time), time-of-day dependence

⁵ “Adaptive preference placement rule” in claims 21 and 22 is assumed to be synonymous with “adaptive preference rule.”

(e.g. morning, afternoon, prime time), viewer dependence, or any combination thereof.

Ex-1004, ¶77, ¶80, ¶81 (“As shown in FIG. 6, the ad queue can contain additional columns which indicate linked sponsorship parameters such as the time of day, programs in which the advertisement should be shown, and the viewer to which the advertisement should be shown.”), Fig. 6:

AD QUEUE	TIME OF DAY	PROGRAMS	VIEWER
FORD	6-9PM		
MACY'S			A
KRAFT	9-12AM	SOAPS	
WALMART			
⋮			
SEARS	6-9PM	BUFFY	B

FIG. 6

Applying the sponsorship model to Eldering-I's subscriber system enables "hybrid of orthogonal and linked sponsorships," which "increases the effectiveness of targeted advertising." Ex-1004, ¶82; Ex-1003, ¶103.

Changes to viewing parameters may affect whether one or more of the linked sponsorship parameters is satisfied, triggering rescheduling of advertisements according to the rules of the hybrid orthogonal-linked sponsorship model. For example, in Figure 6's example, a user input changing the type of program from news to soap opera (*supra* §V.A.3[1e]/[17e]/[21f]/[22f]) would warrant moving the "KRAFT" advertisement from the third place in the queue to the top of the queue⁶ because its linked sponsorship parameter "SOAPS" is satisfied by the current viewing parameter (e.g., a soap opera is being presented). Ex-1004, Fig. 6; Ex-1003, ¶104. As another example, if Eldering-I's profiling module determines that the viewer has changed to viewer A based on user input (*supra* §V.A.3[1e]/[17e]/[21f]/[22f]), this change in viewer identity may warrant moving the "MACY'S" advertisement from the second place in the queue to the top of the queue because its linked sponsorship parameter "A" is satisfied by the current viewing parameter (e.g., the viewer being A). Ex-1004, Fig. 6; Ex-1003, ¶105.

⁶ For this example, the linked sponsorship parameter "9-12 am" parameter for "KRAFT" is assumed to be satisfied.

Furthermore, Eldering-I's "time dependence" linked sponsorship parameter indicates a particular time or position in the media content, the satisfaction of which depends on the timing of an upcoming avail. Ex-1004, ¶5 ("In essence, each advertisement is 'linked' to a particular point within a particular channel."), ¶¶50-51, ¶77. A user input may adjust the play position such that time of an upcoming avail matches the "time dependence" parameter of an advertisement. This would cause the advertisement to be moved to a position in the ad insertion schedule that corresponds to the avail. Ex-1003, ¶106. In addition, a user input may complete within a period specified by a "time-of-day dependence" parameter and cause a corresponding advertisement to be inserted in an upcoming avail. Ex-1004, ¶77, Fig. 6; Ex-1003, ¶107.

In each of the above examples, the alternate insertion point/position is determined by rules of the hybrid orthogonal-linked sponsorship model. Therefore, Eldering-I teaches that the alternatively sequenced insertion points are adaptively selectable by the intersplicer according to selection criteria (e.g., criteria based on linked-sponsorship parameters) defined by one or more adaptive preference rules (e.g., rules of the hybrid orthogonal-linked sponsorship model). Ex-1003, ¶¶108-109.

Eldering-I further teaches **taking into account the new play position and at least one of a length of time associated with playing the digital media**

content, a number of digital media data blocks of the digital media content to be played, and a point in time the digital media content is to be played in selecting the alternatively sequenced insertion points/alternate insertion positions. Ex-1003, ¶110.

First, as explained above, the combination teaches rescheduling advertisements based on user input that would have changed viewing parameters such as the type of program and characteristics of the upcoming avail, both of which depend on the new play position. *Supra* §V.A.3[1e]/[17e]/[21f]/[22f]. By taking into account these viewing parameters, the combination teaches **taking into account the new play position**. Ex-1003, ¶111.

Second, the linked sponsorship parameters include time dependence, which indicates a particular time in the media content (e.g., a particular point in the media content associated with a channel), where an advertisement can be inserted. Ex-1004, ¶5, ¶77. Satisfaction of this parameter requires the timing of an avail to match the specific time in the digital media content as signified by the time dependence parameter. Ex-1004, ¶5, ¶¶50-51, ¶77. The signified time corresponds to **a length of time associated with playing the digital media content** (e.g., the length of time between the new play position and the signified time). Ex-1003, ¶112.

Eldering-I teaches that digital media content includes avails with predetermined time or location in the media content. Ex-1004, ¶13, ¶27, ¶35, ¶44, ¶46, ¶50; Ex-1003, ¶113. Because the timing or location of the avails are predetermined, there is a fixed portion of digital media content between an upcoming avail and the new play position. Ex-1004, ¶13, ¶27, ¶35, ¶44, ¶46, ¶50; Ex-1021, ¶33, ¶38, ¶40, Figs. 5-6. Inserting advertising content at the avail takes into account **a length of time associated with playing the digital media content and a number of digital media data blocks of the digital media content to be played.** *Supra* V.A.3[1d]/[17d]/[21e]/[22e]; Ex-1003, ¶114.

Third, the linked sponsorship parameters include time-of-day dependence. Ex-1004, ¶77. Rescheduling advertisements based on this parameter takes into account **a point in time the digital media content is to be played.** Ex-1003, ¶115.

The combination therefore teaches limitations [1f], [17f], [21g], and [22g]. Ex-1003, ¶¶99-116.

[1g]/[17g]/[21h]/[22h] such that [at least one of the alternatively sequenced insertion points/the alternate insertion position] is positioned at a play position in the digital media content that satisfies a condition selected from: the play position being a predetermined length of time after the new play position, the play position being a predetermined number of digital media data blocks after the new play position[, and [the play position being at a predetermined time of the hour after the new play position];

Eldering-I teaches that the locations of avails in media content are predetermined. Ex-1004, ¶44 (“[A]vails ... are predetermined by the TV networks[.]”), ¶13, ¶27, ¶29, ¶35, ¶46, ¶50. Because the locations of avails in media content is predetermined, for a new play position chosen by the user, the length of time or amount of media content between each upcoming avail and this new play position is fixed and predetermined. Ex-1003, ¶119. Furthermore, Eldering-I’s time dependence parameter predetermines the position in media content where an advertisement can be displayed, leading to a predetermined length of time and amount of content between this position and the new play position. *Supra* §V.A.3[1e]/[17e]/[21f]/[22f]; Ex-1004, ¶5, ¶¶50-51, ¶77; Ex-1003, ¶120.

The combination of Eldering-I and Eldering-II teaches or suggests that **an alternatively sequenced insertion point/alternate insertion position is positioned at a play position** (e.g., position of avail corresponding to the advertisement’s new position in the ad insertion schedule) **in the digital media**

content that satisfies a condition selected from: the play position being a predetermined length of time after the new play position and the play position being a predetermined number of digital media data blocks after the new play position ([1g], [17g], [21h], [22h]). Ex-1003, ¶¶117-121.

Furthermore, Eldering-I teaches rescheduling advertisements based on the time of the day. Ex-1004, ¶51, ¶77 (“time-of-day dependence (e.g. morning, afternoon, prime time)”), ¶79, ¶81, Fig. 6. A POSITA would have understood that the time of the day can be specified in different granularity, including fractions of hours. Because television advertisements were traditionally scheduled at certain times of the hour such as top of the hour or half-past the hour, a POSITA would have found it obvious to specify times of the hour for displaying advertisements based on Eldering-I’s teachings. The combination thus teaches or suggests **the play position being at a predetermined time of the hour after the new play position.** Ex-1003, ¶122.

[1h]/[17h] a user interface output for causing presentation of the content stream during a play period associated with one or more states of play such that a part of the digital advertising content is adaptively played at the one or more alternatively sequenced insertion points, instead of [at] the one or more initially sequenced insertion points; and

[21i]/[22i] causing presentation of the modified content stream at the digital media player system during a play period associated with one or more states of play;

[21j]/[22j] causing adaptive presentation of a required part of the digital advertising content at the alternate insertion [position/point], instead of at the one or more initially [sequenced/defined] insertion [points/position];

Eldering-I’s digital media player device/system (e.g., subscriber system) has **a user interface (output)**, such as one provided by a set-top box for display by a television. Ex-1004, ¶25, ¶37, ¶34, Fig. 1; Ex-1003, ¶123.

Eldering-I’s user interface **causes presentation of the content stream**, original and modified, **during a play period** ([1h], [17h], [21i], [22i]). *E.g.*, Ex-1004, ¶17 (“The set top box inserts the ads into the incoming programming channel according to the ad insertion schedule, and displays the programming channel with the inserted advertisements on the display device.”), ¶25, ¶¶32-33, ¶37, ¶47, ¶82; Ex-1003, ¶124.

The combination teaches rescheduling advertisements to new insertion points/positions in response to user input. *Supra* §V.A.3[1e]/[17e]/[21f]/[22f]. By presenting the modified content stream, the user interface output **causes adaptive presentation/playback of part of the digital advertising content** (e.g.,

rescheduled advertising content) **at the alternatively sequenced insertion points/alternate insertion position, instead of the initially sequenced insertion points** ([1h], [17h], [21j], [22j]). As explained below, the combination teaches that the part of the digital advertising content is **required** ([21j], [22j]). *Infra* §V.A.3[1i]/[17i]/[21k]/[22k]; Ex-1003, ¶125.

The combination further teaches that the **play period is associated with one or more states of play** ([1h], [17h], [21i], [22i]). As explained below, Eldering-II teaches specifying that an advertisement can be played, is preferred to be played, or is required to be played. *Infra* §V.A.3[1i]/[17i]/[21k-l]/[22k-l]; Ex-1005, ¶155. Thus, the combination teaches that the play period for presenting the content stream is associated with at least three states of play: a state when media content is in progress, a state when optional advertising content (e.g., advertisements that can or are preferred to be played) is in progress, and a state when required advertising content is in progress. Ex-1003, ¶126.

The combination therefore teaches limitations [1h], [17h], [21i-j], and [22i-j]. Ex-1003, ¶¶123-127.

[1i]/[17i] at least a first memory for storing a setting to indicate a first state of play, the setting including a first value to indicate presentation of a required part of the digital advertising content is in progress during presentation of the content stream such that responsive to detecting the first value in the first memory, the user interface [input] is disabled to prevent commands comprising [at least one of a user volume control or] a user navigation control from altering a course of presentation of the content stream [while presentation of the required part of the digital advertising content is in progress].

[21k]/[22k] keeping a setting, in at least a first memory of the digital media player system, to indicate a first state of play, the setting including a first value to indicate presentation of the required part of the digital advertising content is in progress during presentation of the modified content stream; and

[21l]/[22l] responsive to detecting the first value in the first memory, disabling user interface commands comprising a user navigation control that enables the user to alter a course of presentation of the [modified] content stream.

Eldering-II teaches that certain advertisements are required where others are optional. Ex-1005, ¶155 (“The associated ads portion of the VoD content list 582 may indicate ads that can, are preferred, or *are required to be played...*”); Ex-1003, ¶129. Eldering-II teaches two ways to handle user input for skipping over or fast forwarding through advertisements: disabling such control functions or displaying an alternative advertisement. Ex-1005, Abstract, ¶58, ¶110, ¶124, ¶130, ¶165 (“As previously discussed the VoD system may not enable the subscribers to fast forward or skip advertisements that are delivered with the VoD content. Alternatively, the subscriber may be presented with a short alternative ad when the subscriber attempts to fast forward or skip the advertisement[.]”); Ex-1003, ¶130.

In light of Eldering-II's teachings, a POSITA would have found it obvious to disable user control functions when a required advertisement is in progress, while allowing an optional advertisement to be skipped and replaced with an alternative advertisement. Ex-1005, ¶155; Ex-1003, ¶131. It would have been obvious to implement Eldering-II's function by disabling the user interface input. Ex-1003, ¶132. Eldering-II thus teaches or suggests that **the user interface input is disabled to prevent commands comprising a user navigation control** (e.g., skip, fast forward) **from altering a course of presentation of the content stream while presentation of the required part of the digital advertising content** (e.g., required advertisements) **is in progress** ([1i], [17i]). In doing so, Eldering-II teaches or suggests **disabling user interface commands comprising the user navigation control that enables the user to alter a course of presentation of the (modified) content stream** (e.g., skip, fast forward) ([21i], [22i]).

A POSITA would have been motivated to apply Eldering-II's teachings to Eldering-I such that certain advertisements are designated as required and user navigation control functions such as skip and fast forward are disabled when required advertisements are displayed. Eldering-I has a goal of "improv[ing] the effectiveness of targeted advertising" (Ex-1004, ¶18), where it is desirable to allow an advertiser to "purchase[] a particular avail" (*id.*, ¶78). Eldering-II teaches that an advertisement may pay a fee to have an advertisement played (Ex-1005, ¶155)

and disabling user control functions allows “the advertiser to get some value” (*id.*, ¶110). A POSITA would have understood that navigation control functions can be used to bypass advertisements. *Supra* §§V.A.3[1c, e]/[17c, e]/[21c, f]/[22c, f]; Ex-1005, ¶110 (“[I]t is likely that the subscriber would attempt to fast forward or skip through the ads.”). Applying Eldering-II’s teachings would have addressed this issue and ensured that value is provided to advertisers for purchasing a particular avail. Ex-1005, ¶110; Ex-1003, ¶133.

The combination simply involves applying a known technique (e.g., disabling navigation control functions when required advertising content is displayed) to a known device/system (e.g., subscriber system) ready for improvement to yield predictable results. A POSITA would have had a reasonable expectation of success because disabling user control was a conventional function that a POSITA would have been able to implement using software. This would not have changed the principle of operation of either reference because it uses a known technique (e.g., disabling navigation control functions when required advertising content is displayed) to improve a similar device/system in the same way that the technique is taught. Ex-1003, ¶134.

Both Eldering-I and Eldering-II tracks advertisement display activities. Ex-1004, ¶48 (“The advertisement insertion module 304 generates and stores the advertisement insertion log ... [which] is essentially the schedule of the ads

inserted and whether or not they were inserted successfully and/or displayed.), Fig.

2:

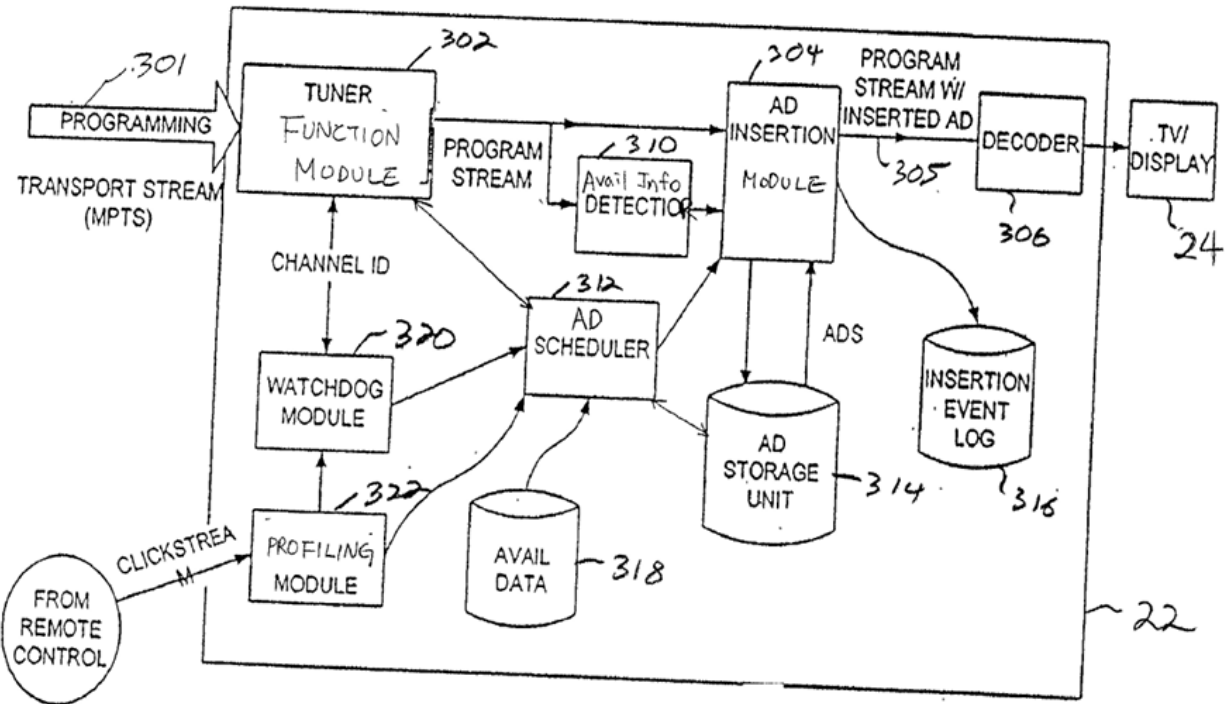


Figure 2

Ex-1005, ¶111 (“The STB 510 tracks the content and the ads that are viewed.”);

Ex-1003, ¶135. By tracking advertisement display, Eldering-I and Eldering-II teach or suggest storing information about an advertisement that is currently in progress (e.g., as the newest entry of Eldering-I’s advertisement insertion log, as temporary data in memory) in memory. Ex-1004, ¶43, ¶70. Ex-1003, ¶136.

A POSITA would have found it obvious to store the information about advertisement in progress as a setting in memory because this approach is fundamental to conventional computer architecture. Ex-1003, ¶137. A POSITA

would have understood that applying Eldering-II's teaching of disabling navigation control functions would have required determining that a required advertisement is in progress and a straightforward and obvious method to do so is to check the setting in memory containing such information. Ex-1003, ¶138. In fact, Patent Owner's Infringement Contentions indicate a belief that storing such a setting in the memory is necessary for the function of disabling user control when advertisement is shown. Ex-1016, 00065.

The combination of Eldering-I and Eldering-II thus teaches or suggests **storing/keeping a setting** (e.g., setting in memory with information about the advertisement in progress) **in a first memory of the digital media player device/system to indicate a first state of play** (e.g., a state when required advertising content is in progress), **the setting including a first value** (e.g., information corresponding to the required advertising content) **to indicate that a required part of the digital advertising content** (e.g., required advertising content) **is in progress during presentation of the (modified) content stream such that responsive to detecting the first value in the first memory**, user interface input/user commands are disabled ([1i], [17i], [21k], [22k]). Ex-1003, ¶¶128-139.

4. Dependent Claims 2, 15

- 2. The digital media player device as in claim 1, wherein the user interface input comprises a graphical user interface that includes a time bar to allow the user to control the course of presentation of the digital media content received to a specific point in the presentation past at least one of the one or more initially sequenced insertion points.**
- 15. The device as in claim 1, wherein the user interface input includes a time bar configured to control the intersplicer to alter a course of presentation of the content stream in response to the user dragging the time bar, the dragging of the time bar enabling at least one of fast-forward play, skipping forward, backward skipping to a fixed point, slow motion play, and frame advance play.**

The combination teaches or suggests claims 2 and 15. Ex-1003, ¶¶140-144.

The combination of Eldering-I and Eldering-II teaches a user interface input that allows the user to control the course of presentation of the digital media content using input such as skip or fast forward. *Supra* §V.A.3[1c]. **The user interface input includes a graphical user interface** (claim 2) as media content is presented graphically. Ex-1004, ¶25, ¶34, ¶37, Figs. 1-2. A POSITA would have found it obvious for this graphical user interface to includes a time bar because commands such as skip and fast forward were conventionally carried out by a user dragging a slider to a desired point. *See, e.g.*, Ex-1023, ¶31, ¶45, Figs.1, 2, 4, 9. Manipulation of a time bar was one of a very limited number of conventional user interface designs that allow a user to skip or fast forward. Ex-1003, ¶142.

The combination a user input bypassing an original advertisement. *Supra* §V.A.3[1e]; Ex-1005, ¶58, ¶110, ¶112, ¶124, ¶165. Thus, the combination teaches

or suggests **a time bar that allows the user to control the course of presentation of the digital media content received to a specific point** (e.g., new play position) **in the presentation past at least one of the one or more initially sequenced insertion points** (claim 2). Ex-1003, ¶143.

The combination further teaches an intersplicer that controls a course of presentation of the content stream in response to user input. *Supra* §§V.A.3[1d-e]. The combination therefore teaches or suggests **a time bar configured to control the intersplicer to alter a course of presentation of the content stream in response to the user dragging the time bar, the dragging of the time bar enabling at least one of fast-forward play, skipping forward, backward skipping to a fixed point, slow motion play, and frame advance play** (claim 15). Ex-1003, ¶144.

5. Dependent Claims 4, 5

4. The digital media player device as in claim 1, wherein the digital media content comprises at least one media file.

5. The digital media player device as in claim 1, wherein the digital advertising content comprises at least one advertisement file.

The combination teaches claims 4 and 5. Ex-1003, ¶¶145-148.

Eldering-II teaches that digital media content and digital advertising content are stored as files and transmitted to users. Ex-1005, ¶99 (“The ad database 570 stores ad metadata ... 572 and *ad media files* (ads) 574. The VoD content database

580 stores a VoD content list 582 and *VoD media files* (VoD content) 584. ...

[T]he download carousel 525 transmits the files that need to be updated to the subscriber[.]”), ¶153, ¶163; Ex-1003, ¶146.

Eldering-II teaches storing a piece of media program as one media file (e.g., .mpg file for “Scary Movie II” in Fig. 6). Ex-1005, ¶99, ¶128, Fig. 6:

⁶⁰⁰ § Media Name	⁶¹⁰ § Type	⁶²⁰ § HHMMSS	⁶³⁰ § URL
Ford Focus	Ad	000030	\\media \ads \ford \focus.mpg
Green Giant Corn	Ad	000030	\\media \ads \pillsbury \corn.mpg
Lord of the Rings	Preview	000300	\\media \previews \newline \lordofrings.mpg
Scary Movie II	Movie	012200	\\media \movies \disney \scarymovie2.mpg
Ford ZX2	Ad	000030	\\media \ads \ford \zx2.mpg
Progresso Soup	Ad	000030	\\media \ads \pillsbury \progresso.mpg

FIG. 6

Alternatively, a piece of media program is stored as multiple media files. Ex-1005, ¶161, Fig. 7:

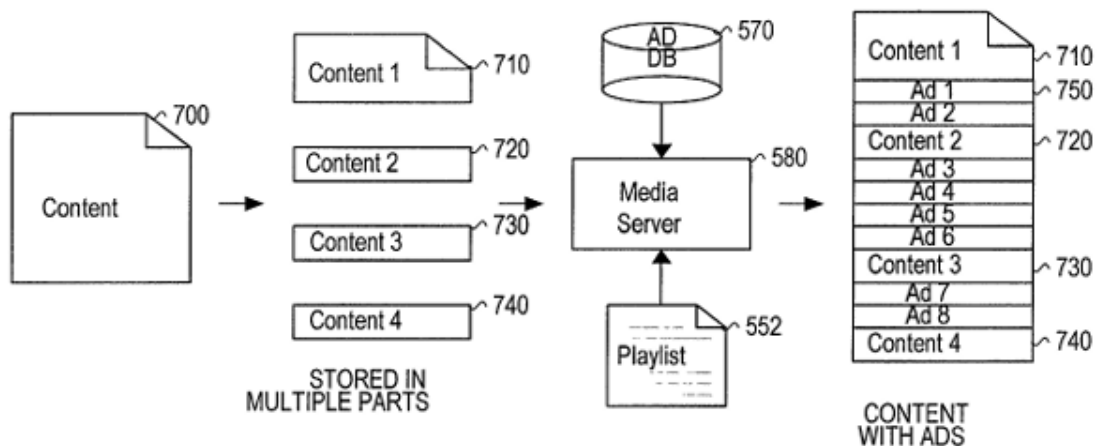


FIG. 7

Ex-1003, ¶147.

Eldering-I also teaches encoding media and advertising content into MPEG files. *E.g.*, Ex-1004, ¶26. The combination of Eldering-I and Eldering-II thus teaches that **the digital media content comprises at least one media file** (e.g., a VOD media file) and that **the digital advertising content comprises at least one advertisement file** (e.g., an ad media file). Ex-1003, ¶148.

6. Dependent Claim 6

6. The digital media player device as in claim 5, wherein a sequence is generated by sub-dividing a media file into two or more segments, and wherein at least a part of the at least one of the advertising file is presented between two of the segments.

The combination teaches claim 6. Ex-1003, ¶¶149-151.

Eldering-I and Eldering-II both teach inserting advertising content within media content. Ex-1004, Abstract (“A system for inserting advertisement into channels of media programming are disclosed for improving effectiveness in targeted advertising.”), ¶¶27-29, ¶33, ¶47, ¶¶70-73; Ex-1005, ¶100 (“[A]ds ... may be inserted in advertisement opportunities (avails) with the content[.]”), ¶126, ¶148, ¶¶159-161; Ex-1003, ¶150.

As explained above, Eldering-II teaches storing a piece of media program as one media file. *Supra* §V.A.5; Ex-1005, ¶99, ¶128, Fig. 6. Eldering-I and Eldering-II teach dividing a media program into multiple segments separated by avails. *Supra* §V.A.3[1d]; Ex-1004, ¶28, ¶29, ¶¶46-47, ¶63, Fig. 4; Ex-1005, ¶100, ¶126, ¶148, ¶¶159-161. This teaches **sub-dividing the media file** (e.g., VOD media file for a movie) **into two or more segments** (e.g., segments before and after an avail respectively) and that **a sequence is generated**, where **at least a part of the at least one of the advertising file** (e.g., an ad media file inserted in an avail) **is presented between the two segments** (e.g., segments of the VOD media file before and after the avail). Ex-1003, ¶151.

7. Dependent Claim 7

7. The digital media player device as in claim 4, wherein the user input results in a change of a sequence of two or more media files by at least one of subtracting an existing media file and re-arranging the sequence of two or more media files in a change of sequence by adding a new media file.

The combination teaches claim 7. Ex-1003, ¶¶152-157.

Eldering-II teaches that user input such as skip and fast forward causes changes to the playlist defining a sequence of media and advertising content. Ex-1005, ¶101 (“The media server 530 then delivers the data 574, 584 to the STB 510 in the order described in the playlist 552. The subscriber may fast-forward, rewind, pause, etc. the content by forwarding flow control commands 514 to the VoD server 550 to process.”). Ex-1003, ¶153. The playlist is controlled by either a server or a subscriber device (e.g., PVR). Ex-1005, ¶101, ¶¶109-110; Ex-1003, ¶154. Eldering-II teaches a user’s skip or fast forward input resulting in rearranging a sequence of files, including removing files that is bypassed and adding files to be displayed. A POSITA would have found it obvious to apply this teaching when media content is skipped or fast forwarded through. Ex-1005, ¶124, ¶165 (“[W]hen a fast forward command is received, the playlist may be modified so that the alternative ad is transmitted instead of the ad. ... The modification of the playlist can either be accomplished by the VoD server 550 or the STB 510 (or PVR).”), Fig. 9:

ORIGINAL PLAYLIST

INDEX	DURATION	URL
001	000030	\\MEDIA\ADS\FOCUS.MPG
002	000030	\\MEDIA\ADS\CORN.MPG
...		

REPLACE AD IN PLAYLIST
WITH SHORT VERSION

NEW PLAYLIST

INDEX	DURATION	URL
001	000030	\\MEDIA\ADS\FOCUS_ADHANCE.MPG
002	000030	\\MEDIA\ADS\CORN.MPG
...		

FIG. 9

Ex-1025, 7:16-30, 9:29-46, 11:57-12:10; Ex-1003, ¶155.

When Eldering-II's control functions (e.g., skip, fast forward) are applied to Eldering-I (*supra* §V.A.3[1c]), it would have obvious to apply Eldering-II's approach of removing files from or adding files to a sequence based on user input. The combination of Eldering-I and Eldering-II thus teaches or suggests that **the user input** (e.g., skip, fast forward) **results in a change of a sequence of two or more media files** (e.g., VOD media files corresponding to a piece of media program) **by at least one of subtracting an existing media file** (e.g., a VOD media file corresponding to a skipped portion) **and re-arranging the sequence of two or more media files in a change of sequence by adding a new media file**

(e.g., a VOD media file corresponding to a portion to be played at the new play position). Ex-1003, ¶156.

8. Dependent Claims 8, 9

- 8. The digital media player device as in claim 1, wherein the user input further comprises one or more navigational choices for the content stream.**
- 9. The digital media player device as in claim 8, wherein the one or more navigational choices are selected from a group consisting of: play, stop, pause/continue, reverse, rewind, fast-forward, slow-motion, track advance, frame-by-frame advance, go direct to point or page in sequence, advance chapter, page turn, change track, change media selection, shuttle knob, and one or more sound controls.**

As explained above, Eldering-II teaches that **the user input further comprises one or more navigational choices for the content stream** including, for example, **play, fast forward or go direct to point in sequence** (e.g., skip). *Supra* §V.A.3[1a], §§V.A.3[1c-d]; Ex-1005, Abstract, ¶58, ¶101, ¶109-110. The combination therefore teaches claims 8 and 9. Ex-1003, ¶158.

9. Dependent Claim 10

- 10. The digital media player device as in claim 1, further comprising: rotating, using an ad manager and an ad rotator, new advertising content into the content stream in response to the user input, the ad manager operative to receive ad files and select ad files for presentation from a database of ad files and the ad rotator configured to replace ad files with new ad files after the ad files have been presented.**

The combination teaches claim 10. Ex-1003, ¶159.

Eldering-I teaches an ad insertion module that inserts advertisements into media content. Ex-1004, Abstract (“The system further includes an ad insertion module which inserts the advertisements into the programming channels according to the stored ordered list.”), ¶42, Fig. 2:

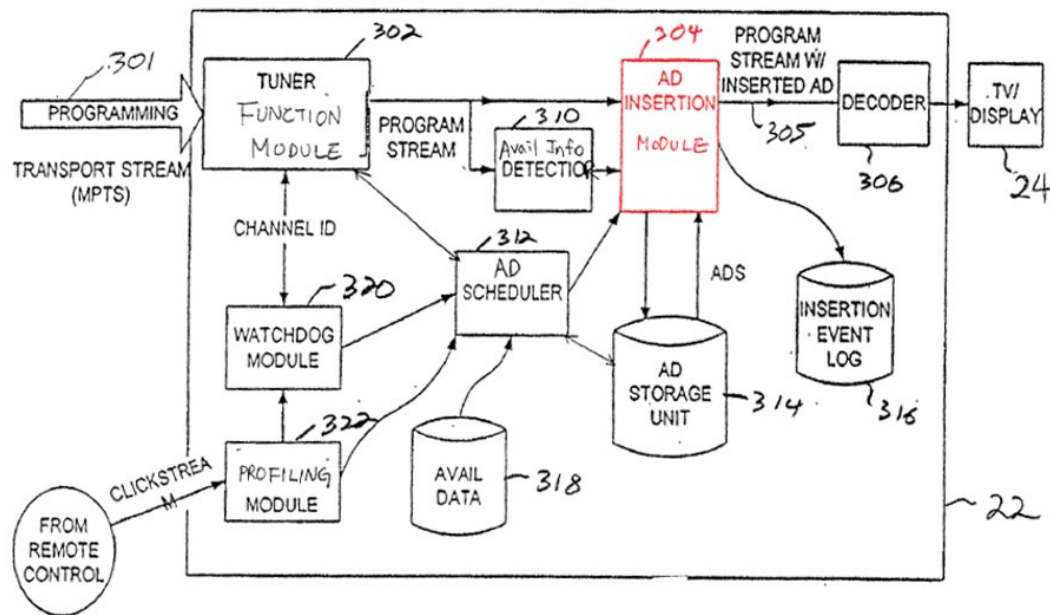


Figure 2

Ex-1003, ¶160.

Based on the ad insertion schedule, the advertisement insertion module selects and requests an advertisement from local storage and inserts it in digital media content. Ex-1004, ¶49, ¶46 (“[T]he advertisement insertion module 304, according to the ad insertion schedule provided by the ad scheduler 312, requests a particular advertisement from the advertisement storage unit 314 which then sends the requested advertisement to the advertisement insertion module 304.”), ¶47

(“The advertisement insertion module 304 inserts or splices the received advertisement into the avail of the programming stream channel.”), ¶48, Abstract, ¶11, ¶17, ¶33, Fig. 2. Eldering-I thus teaches **receiving ad files and selecting ad files for presentation from a database of ad files** (e.g., advertisement storage unit). Ex-1003, ¶161.

The combination teaches modifying the ad insertion schedule in response to user input. *Supra* §V.A.3[1e]; Ex-1004, Abstract, ¶16, ¶18, ¶30, ¶32, ¶¶51-52, ¶¶56-61, ¶63, ¶75, ¶82, Fig. 4. This causes the advertisement insertion module to insert different advertising content into digital media content. *E.g.*, Ex-1004, Abstract, ¶16, ¶33, ¶52 (“[I]t may be necessary or appropriate to change the ad schedule ..., so that most appropriate ads are actually inserted into the programming streams.”). This **rotates new advertising content into the content stream in response to the user input**. Ex-1003, ¶162.

The advertisement insertion module inserts advertisements in the media stream and provide it for display (after decoding) at a “display device.” Ex-1004, ¶47. Display devices, which can be “a TV or computer monitor” (Ex-1004, ¶33), include limited storage space, where content that has been displayed are removed to make space for new content. By providing new advertisements to the display device, the advertisement insertion module **replaces ad files** (e.g., advertisements

that have been displayed) **with new ad files** (e.g., advertisements to be displayed) **after the ad files have been presented**. Ex-1003, ¶163.

Because Eldering-I's advertisement insertion module includes software that performs the recited functionalities of the ad manager and the ad rotator, Eldering-I teaches **an ad manager and an ad rotator**. Ex-1003, ¶164.

Eldering-II includes additional relevant teachings applicable to Eldering-I that further satisfy the limitations of claim 10. Ex-1003, ¶165. First, Eldering-II teaches a set-top box selecting advertisements based on subscriber profiling and requesting the selected advertisements from a server. Ex-1005, ¶¶54-55 ("The ads are then selected and the selections are transmitted upstream to the VoD system for delivery to the subscriber with the video."), ¶¶119-122 ("According to one embodiment, the STB 510 may select the ads itself by comparing ad metadata 572 to the subscriber profile."), Abstract, ¶52, ¶¶99-100, ¶112. Ex-1003, ¶166.

The set-top box receives the requested advertisements from an ad database of the server. Ex-1005, ¶99 ("The ad database 570 stores ... ad media files (ads) 574."), ¶100, ¶161 ("[T]he media server 530 selects ... the appropriate ads 750 from the ad database 570 so that the content can be delivered to the subscriber with ads."). Eldering-II thus teaches **receiving ad files** (e.g., ad media files) **and selecting ad files for presentation from a database of ad files** (e.g., ad database). Ex-1003, ¶167.

Eldering-II further teaches deleting advertisements that have been shown to a user and receiving updated advertisements from the server. Ex-1005, ¶138 (“[T]he STB will delete ads from consideration that have been displayed to the subscriber more than a predetermined number of times.”), ¶99. This teaches **replacing ad files** (e.g., ad media files that have been displayed to the subscriber more than a predetermined number of times) **with new ad files** (e.g., ad media files sent as an update) **after the ad files have been presented**. Ex-1003, ¶168.

It would have been obvious to apply the aforementioned teachings of Eldering-II to Eldering-I. First, Eldering-I teaches selecting advertisements to insert in media stream based on viewer identity. *Supra* §§V.A.3[1e-f]; Ex-1004, Abstract, ¶16, ¶30, ¶32, ¶¶51-52, ¶75. A POSITA would have found it desirable to select and request advertisements based on viewer identity (e.g., determined by Eldering-I’s profiling module) from the head end system (*supra* §V.A.3[1b]; Ex-1004, ¶36) to obtain appropriate advertisements. Ex-1004, ¶61, ¶74, Fig. 2. Applying Eldering-II’s teachings to Eldering-I would have involved no more than using a known technique (e.g., client device selecting and requesting advertisements from server) to improve a similar system (e.g., Eldering-I’s subscriber system) in the same way. Ex-1003, ¶169.

Second, a POSITA would have been motivated to apply Eldering-II’s approach of removing advertisements that have been viewed multiple times to

make space for new advertisements to be stored at Eldering-I's subscriber system (Ex-1004, ¶8, ¶¶35-36), which improves the effectiveness of advertisement exposure. The combination applies a known technique (e.g., removing advertisements viewed multiple times) to a known system (e.g., Eldering-I's subscriber system) ready for improvement to yield predictable results (e.g., fresh advertisements available). Ex-1003, ¶170.

A POSITA would have found it obvious to apply these features of Eldering-II to Eldering-I's advertisement insertion module or group them with the functionalities of the advertisement insertion module because these features are logically related to the advertisement insertion module's functionalities. Ex-1004, ¶¶46-48. Applying Eldering-II's teachings to Eldering-I would have involved modification to software that a POSITA would have had a reasonable expectation of success in implementing. The modifications enhance Eldering-I's functionalities and does not change the principle of operation of either reference. Ex-1003, ¶171.

10. Dependent Claim 11

11. The digital media player device as in claim 1, wherein the adaptively modifying uses two or more of the adaptive preference rules for determining the one or more alternatively sequenced insertion points of at least a part of the digital advertising content.

Rules of Eldering-I's hybrid orthogonal-linked sponsorship model teach the adaptive preference rules. *Supra* §V.A.3[1f]; Ex-1004, ¶¶76-82. Eldering-I teaches scheduling advertising content based on multiple rules of the hybrid orthogonal-

linked sponsorship model. Ex-1004, ¶80 (“[T]he present invention allows the use of combination of linked and orthogonal sponsorship parameters[.]”), Fig. 6:

AD QUEUE	TIME OF DAY	PROGRAMS	VIEWER
FORD	6-9PM		
MACY'S			A
KRAFT	9-12AM	SOAPS	
WALMART			
⋮			
SEARS	6-9PM	BUFFY	B

FIG. 6

The combination thus teaches claim 11. Ex-1003, ¶172.

11. Dependent Claim 13

13. The device as in claim 1, the digital media player device further comprising a media file decryptor configured to receive and decrypt the digital media content during play, the media file decryptor configured to limit access to a non-volatile memory following the decryption of the digital media content.

The combination teaches or suggests claim 13. Ex-1003, ¶¶173-178.

Eldering-I teaches providing copyrighted content to a user for recording and playing back. *E.g.*, Ex-1004, ¶36, ¶¶44-47; *supra* §§V.A.3[1b], [1d]. It would have been obvious to protect the copyrighted content from interception during transmission and to limit unauthorized individuals' access to the recorded content. *See, e.g.*, Ex-1017, ¶6, ¶40. It would have been obvious for Eldering's device to include digital rights management functionalities that provide these protections, which were conventional and commonplace in the 2002 timeframe. *Supra* §V.A.3[1d]; *see, e.g.*, Ex-1017, ¶9; Ex-1018, ¶25; Ex-1003, ¶174.

Eldering-I and Eldering-II teach encoding and decoding media content according to standards such as MPEG. Ex-1004, ¶26, ¶42, ¶47, ¶74; Ex-1005, ¶82, ¶161. Encryption and decryption were conventionally carried out in conjunction with encoding and decoding. *See, e.g.*, Ex-1017, ¶37; Ex-1018, ¶66, ¶70, ¶94; Ex-1024, 000069, 000011, 000029-31; Ex-1018, ¶70; Ex-1003, ¶175. The combination teaches or suggests that **the digital media player device comprises a**

media file decryptor configured to receive and decrypt the digital media content during play. Ex-1003, ¶176.

Furthermore, a POSITA would have found it obvious to use Eldering-I's non-volatile memory (e.g., hard drive) for storing digital media content. Ex-1004, ¶8, ¶27, ¶¶42-43, ¶¶70-71. A POSITA would have found it obvious to limit access to the memory to prevent unauthorized copying or redistribution of the media content after decryption because such software functions were well-known in the art. *See, e.g.*, Ex-1013, ¶5; Ex-1018. Software functionalities that limit access to memory was well-known in the art. *E.g.*, Ex-1013, ¶38; Ex-1018, ¶71, ¶79; Ex-1003, ¶177. It would have obvious to implement such functions with the media file decrypter, and the combination teaches or suggests that **the media file decryptor is configured to limit access to a non-volatile memory following the decryption of the digital media content.** Ex-1003, ¶178.

12. Dependent Claim 14

14. The device as in claim 1, wherein the digital media player device is configured to read a data structure of the one or more data blocks of the digital media content, the data structure including a first field containing data identifying a media file associated with the digital media content, a second field containing data indicative of an ad requirement associated with the digital media content, and a third field containing data representing an ad file associated with the digital advertising content to be displayed with the media file.

The combination teaches or suggests claim 14. Ex-1003, ¶¶179-185.

Eldering-I teaches implementing its ad insertion schedule as a queue. *E.g.*, Ex-1004, ¶49 (“The ad scheduler 312 provides a schedule of ads to be inserted in the form of a queue or other forms”), ¶56. The ad queue includes information about linked sponsorship parameters. Ex-1004, ¶77 (“[T]he orthogonal sponsorship based queue can be provided with one or more linked sponsorship parameters”), ¶81, Fig. 6:

AD QUEUE	TIME OF DAY	PROGRAMS	VIEWER
FORD	6-9PM		
MACY'S			A
KRAFT	9-12AM	SOAPS	
WALMART			
⋮			
SEARS	6-9PM	BUFFY	B

FIG. 6

The ad queue **includes a first field containing data identifying a media file associated with the digital media content** (e.g., “BUFFY”), **a second field containing data indicative of an ad requirement associated with the digital media content** (e.g., a requirement for the “SEARS” advertisement to be played 6-9pm)⁷, **and a third field containing data representing an ad file associated with the digital advertising content to be displayed with the media file** (e.g., “SEARS”). Ex-1003, ¶180.

The ad queue/ad insertion schedule is constructed based on “scheduling instructions” from the head end system. Ex-1004, ¶29, ¶50, ¶80. The scheduling instructions thus include data in the first, second, and third fields, which the subscriber system reads and utilizes to construct the ad queue. Ex-1003, ¶181. A POSITA would have found it obvious to include scheduling instructions as metadata of the data structure of the media stream transmitted by the head end system. Ex-1025, 1:41-55, 4:19-34, 4:54-5:42; Ex-1026, ¶20, ¶23, ¶35, ¶¶39-40; *Supra* §V.A.3[1b]. Eldering-I thus teaches or suggests that **the digital media player device is configured to read a data structure of the one or more data blocks of the digital media content** including the first, second, and third fields. Ex-1003, ¶182.

⁷ The ’403 patent uses the term “ad requirement” broadly, describing that it is “an arbitrary function that can depend on ... [an] item’s running time.” Ex-1001, 30:3-18, 27:36-45, 32:3-17.

Eldering-II further teaches the limitations of claim 14. Eldering-II teaches a “VOD content list” that includes **a first field containing data identifying a media file associated with the digital media content** (e.g., program title), **a second field containing data indicative of an ad requirement associated with the digital media content** (e.g., a requirement to play certain advertisements), **and a third field containing data representing an ad file associated with the digital advertising content to be displayed with the media file** (e.g., ads associated with the content). Ex-1005, ¶¶154-155; Ex-1003, ¶183.

Eldering-II teaches that the VOD content list is sent with media content from servers to subscriber devices. Ex-1005, ¶99. This teaches or suggests that **the digital media player device is configured to read a data structure of the one or more data blocks of the digital media content** including the first, second, and third fields. Ex-1003, ¶184. A POSITA would have found Eldering-II’s VOD content list to provide a suitable format for providing scheduling instructions and would have found it obvious to apply this format to Eldering-I. Ex-1003, ¶185.

13. Dependent Claims 18, 19

18. The system as in claim 17, wherein the at least first memory is part of the computer-implemented system.

19. The system as in claim 17, wherein the at least first memory is part of at least one remote system.

Eldering-I teaches storing data related to advertisements locally or remotely. *E.g.*, Ex-1004, ¶35, ¶69. A POSITA would have found it obvious for **the at least first memory to be part of the computer-implemented system or at least one remote system.** Ex-1003, ¶186.

14. Dependent Claim 23

23. The method as in claim 22, wherein presentation data comprising an indication of the digital advertising content that has been presented is stored in a second memory of the digital media player system.

The combination teaches claim 23. Ex-1003, ¶¶187-189.

As explained above, Eldering-I teaches generating and storing an advertisement insertion log, which indicates “the schedule of the ads inserted and whether or not they were inserted successfully and/or displayed.” *Supra* §V.A.3[22k]; Ex-1004, ¶, Fig. 2:

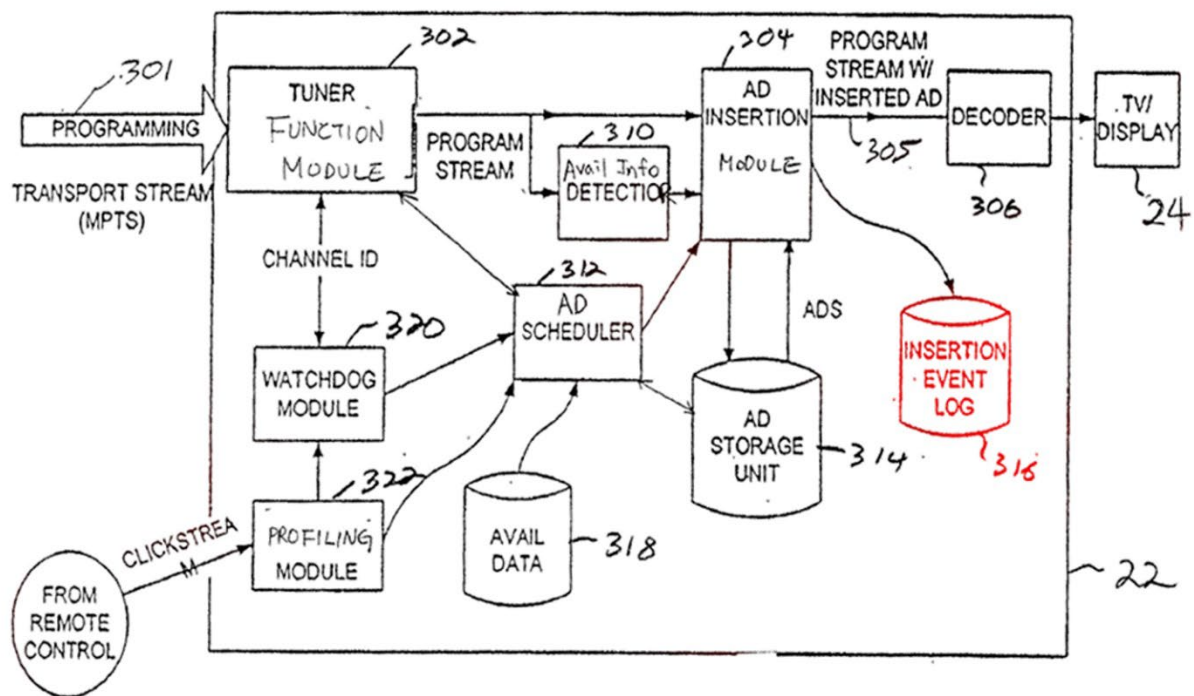


Figure 2

The advertisement insertion log includes data that indicates digital advertising content that has been presented. The data is stored in memory. This teaches **presentation data comprising an indication of the digital advertising content that has been presented stored in a second memory of the digital media player system.** Ex-1003, ¶188.

To the extent Patent Owner argues that the second memory is required to be different from the first memory, it would have been obvious for information about the advertisement that is in progress to be stored temporarily in memory (e.g., RAM) and transferred to the advertisement insertion log (e.g., stored in hard drive)

after the content is displayed, as explained above. *Supra* §V.A.3[22k]. Ex-1004, ¶35, ¶37, ¶43; Ex-1003, ¶136, ¶189.

B. Ground 2: Claims 2 and 15 Are Rendered Obvious by Eldering-I, Eldering-II, and Crow

1. Crow (Ex-1006)

Crow is prior art under at least pre-AIA §§102 (a), (e) because it was filed and patented before June 27, 2002. Ex-1003, ¶191.

Crow “relates to user interfaces for processing ... media information[.]” Ex-1006, 1:12-20; Ex-1003, ¶192. Crow discusses a graphical user interface that includes a time bar. *E.g.*, Ex-1006, 15:30-49, 17:51-18:8, 18:44-19:20, Figs. 6A–6B, Figs. 8A–8C. Crow allows users to perform operations such as skipping over content from one point to another specific point by dragging the time bar. *E.g.*, Ex-1006, 17:51-18:8, 18:44-19:20, Figs. 8A–8C. Ex-1003, ¶193.

Crow is in the same field of endeavor as the ’403 patent (media display). *See supra* §III; *e.g.*, Ex-1006, 1:12-20; Ex-1003, ¶194.

2. Dependent Claims 2, 15

To the extent Ground 1 does not explicitly disclose “a time bar,” Crow teaches a graphical user interface that includes a time bar (271). *E.g.*, Ex-1006, 17:51-18:8, 8:25-10:57, Fig. 3A, Figs. 8A–8B:

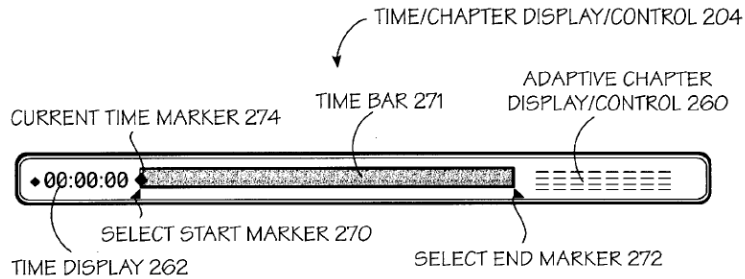


Fig. 8A

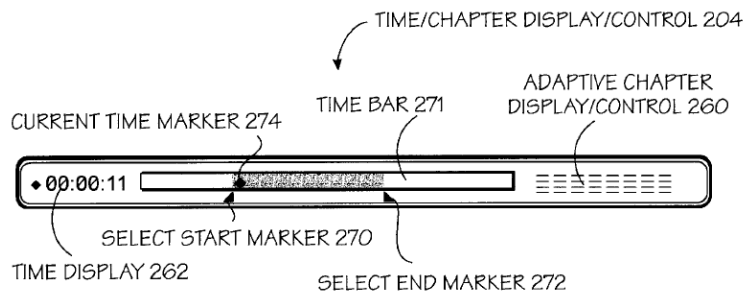


Fig. 8B

Ex-1003, ¶195.

Dragging the time bar allows the user to control the course of presentation of digital media content to a specific point in the presentation. *E.g.*, Ex-1006, 17:51-18:8 (“A user may drag the position of the current time marker 274 along the time bar 271 to change the time-based media file’s current time to a currently selected time.”), 18:23-19:20, 19:42-45, Figs. 8A-8C. Crow at least teaches that dragging its time bar triggers a forward or backward skipping operation from the current time marker’s original position to the selected position. Ex-1003, ¶196.

A POSITA would have been motivated to apply Crow’s time bar teachings with the combination of Eldering-I and Eldering-II because it was customary for users to perform navigation operations (e.g., skipping, fast forwarding) by dragging a time bar, which makes media viewing intuitive and efficient. *E.g.*, Ex-1004, Abstract, 2:24-45, 5:40-55, Figs. 1–2; Ex-1023, ¶31, ¶45, Figs.1, 2, 4, 9; Ex-1003, ¶197.

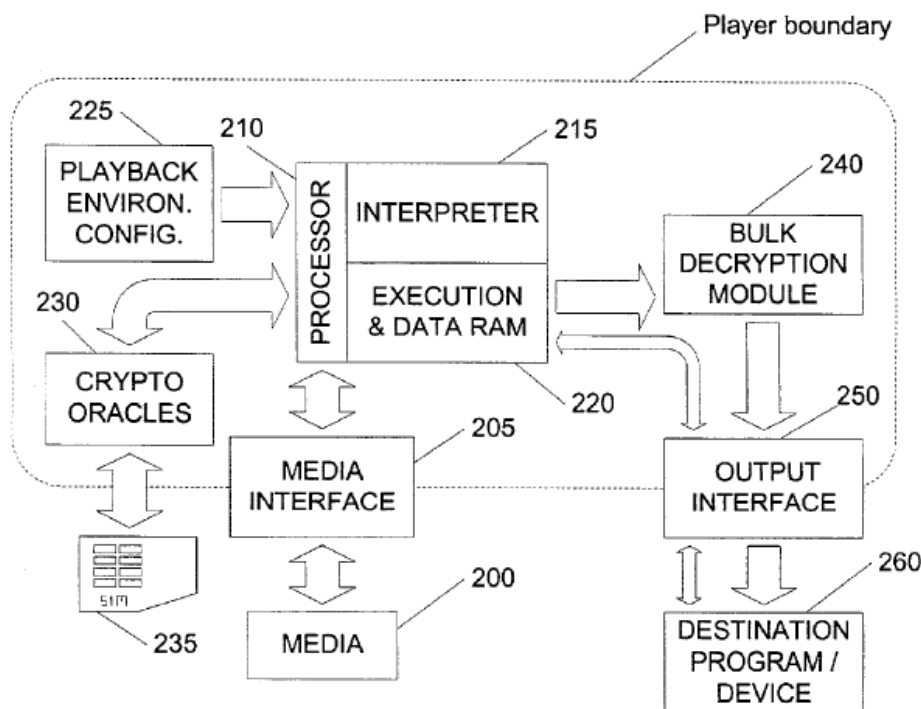
C. Ground 3: Claim 13 Is Rendered Obvious by Eldering-I, Eldering-II, and Kocher

1. Kocher (Ex-1007)

Kocher is prior art under at least pre-AIA §102 (e) because it was filed before June 27, 2002. Ex-1003, ¶199.

Kocher “relates generally to securing the distribution of digital content against piracy and other unauthorized use or redistribution.” Ex-1007, ¶2. Kocher teaches a media player implementing the system, which “decrypt[s] or otherwise gain[s] access to protected content.” Ex-1007, ¶¶36-37, ¶41, ¶43, Fig. 2:

FIG. 2



Ex-1003, ¶200.

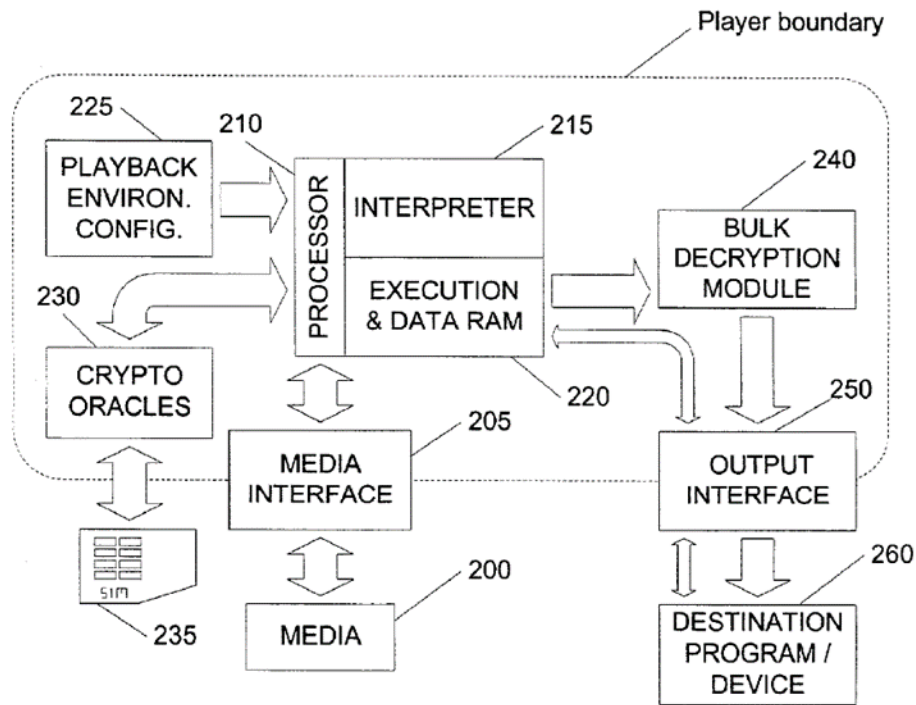
Kocher’s media player includes a bulk decryption module that retrieves encrypted content and decrypts it. *E.g.*, Ex-1007, ¶2, ¶50, ¶¶112-113; Ex-1003, ¶201. Kocher’s “player[] can provide content with secure, nonvolatile storage for maintaining state between playings.” Ex-1007, ¶¶92-93; Ex-1003, ¶202.

Kocher is in the same field of endeavor as the ’403 patent (media display). *See supra* §III; *e.g.*, Ex-1007, Abstract, ¶37, ¶43; Ex-1003, ¶203.

2. Dependent Claim 13

To the extent Ground 1 does not explicitly disclose a component with functionalities corresponding to “media file decryptor,” Kocher discloses **a media file decryptor**. Ex-1003, ¶204.

First, Kocher teaches a bulk decryption module that “retrieves” and “decrypts” received content as playback continues. Ex-1007, ¶50, Fig.2:



Here, the bulk decryption module is **configured to receive content** (e.g., from memory or media interface) **and decrypt the received digital media content during play**. Ex-1003, ¶205.

Second, Kocher teaches using secure, nonvolatile storage for storing state information between playback of different portions of media content. Ex-1007,

¶92. For example, the secure, nonvolatile storage is used for “track[ing] offline pay-per-view viewing histories for later billing.” *Id.* Ex-1003, ¶206. The non-volatile memory is locked by default and unlocked when data reading or writing by authorized programs is needed. Ex-1007, ¶¶92, ¶93 (“[P]layers contain several blocks of nonvolatile memory, which are locked ... by default. ... To gain access to this memory block, the content calls a function that takes as input a digital signature over the block of code that is authorized to access the memory.”); Ex-1003, ¶207.

After a portion of the media content (e.g., a playing, a title) is displayed to the user, the secured nonvolatile memory is unlocked for the viewing history to be updated and relocked to limit access to the memory. Ex-1007, ¶¶92-93. This teaches **limiting access to a non-volatile memory following the decryption of the digital media content**. Ex-1003, ¶208. A POSITA would have found it obvious to implement Kocher’s memory access control functionalities with a software component like the bulk decryption module. Kocher thus teaches or suggests **a media file decryptor** configured to perform the operations recited by claim 13. Ex-1003, ¶209.

A POSITA would have found it obvious and been motivated to apply Kocher’s teachings regarding decryption and memory access management to Eldering-I’s subscriber system to protect Eldering-I’s copyrighted content. *Supra*

§V.A.11; Ex-1003, ¶210. Furthermore, both Eldering-I and Eldering-II teach tracking and managing users' viewing activities. *Supra* §V.A.3[1i]; e.g., Ex-1004, ¶48, Fig. 2; Ex-1005, ¶111. A POSITA would have found it obvious to protect such information from tampering by the user or other applications using Kocher's teaching of limiting access to nonvolatile memory for storing critical information for media display because the information is critical for billing management. E.g., Ex-1004, ¶48; Ex-1005, ¶111. Because Eldering-I teaches storing data in non-volatile memory, Kocher's teachings are readily applicable. Ex-1004, ¶¶42-43; Ex-1003, ¶211. Applying Kocher's teachings to Eldering-I would have been simply applying a known technique (e.g., Kocher's decryption and memory access management functionalities) to a known device (Eldering-I's subscriber system) to yield predictable results. Ex-1003, ¶212.

The combination of Eldering-I, Eldering-II, and Kocher renders obvious claim 13. Ex-1003, ¶¶204-213.

VI. DISCRETIONARY ANALYSIS FOR REVIEW

Fintiv. Discretionary denial is not warranted because the parallel case in district court has been dismissed with prejudice and an appeal is pending.

Advanced Bionics. Denial under §325(d) is likewise unwarranted because none of Eldering-I, Eldering-II, Crow, and Kocher was relied upon during the '403

patent's prosecution. Nor were they cited on the face of the '403 patent or during prosecution. Ex-1003, ¶30, ¶36, ¶190, ¶198.

VII. STANDING

Petitioner certifies that Petitioner is not barred or estopped from requesting this *inter partes* review and the '403 patent is IPR-eligible.

VIII. MANDATORY NOTICES AND FEES

1. **Real Party In Interest:** The real parties-in-interest here are Hulu, LLC and The Walt Disney Company. No other parties directed, controlled, or funded this *Inter Partes* Review proceeding (IPR).

2. **Related Matters:**

Piranha Media Distribution, LLC v. Hulu LLC, 2-24-cv-00498 (C.D. Cal.)

Piranha Media Distribution, LLC v. Hulu, LLC, Case No. 25-1038 (Fed. Cir.)

3. **Lead and Backup Counsel:** Pursuant to 37 C.F.R. §42.8(b)(3) and 42.10(a), Petitioner designates Harper Batts (Reg. No. 56,160) as lead counsel and Chris Ponder (Reg. No. 77,167), Jeffrey Liang (Reg. No. 69,043), and Fangzhou Qiu (Reg. No. 82,810) as back-up counsel, each of Sheppard, Mullin, Richter & Hampton LLP.

4. **Service Information:** Petitioner consents to service by electronic mail addressed to:

HBatts@sheppardmullin.com;
CPonder@sheppardmullin.com; and

JLiang@sheppardmullin.com
FQiu@sheppardmullin.com
LegalTM-Piranha-CDCA@sheppardmullin.com

5. Petitioner's counsel may also be served by mail or hand delivery at Sheppard, Mullin, Richter & Hampton LLP, 1540 El Camino Real Suite 120, Menlo Park, CA 94025. Petitioner's counsel may be reached by telephone at (650) 815-2600 and by facsimile at (650) 815-2601.

6. **Fees:** The Office is authorized to charge fees for this Petition to Deposit Account 50-4561, Ref. 16VF-388878.

Respectfully submitted,

SHEPPARD, MULLIN,
RICHTER & HAMPTON LLP

/Harper Batts/

Harper Batts (Reg. No. 56,160)
Attorneys for Petitioner

CLAIM APPENDIX

[1a] A digital media player device for controlling digital media presentations, the digital media player device comprising:

[1b] one or more processors for receiving data comprising digital media content and digital advertising content;

[1c] a user interface input for allowing a user to control a course of presentation of the digital media content received;

[1d] an intersplicer for controlling one or more insertion points of the digital advertising content into the digital media content thereby sequencing the digital media content and the digital advertising content, the sequencing comprising ordering one or more data blocks of the digital media content and one or more data blocks of the digital advertising content into a content stream playable as audio or visual content perceivable by the user, the content stream comprising one or more initially sequenced insertion points at which the digital advertising content is scheduled to be presented relative to the digital media content during play;

[1e] in response to user input updating a current play position in the content stream to a new play position in the content stream, the one or more processors using one or more adaptive preference rules to adaptively modify a presentation position of the digital advertising content from at least one of the one or more initially sequenced insertion points to one or more alternatively sequenced

insertion points in the digital media content, at least one of the one or more alternatively sequenced insertion points being different than the one or more initially sequenced insertion points relative to the digital media content within the content stream;

[1f] the one or more alternatively sequenced insertion points being adaptively selectable by the intersplicer according to selection criteria defined by the one or more adaptive preference rules taking into account the new play position and at least one of a length of time associated with playing the digital media content and a number of digital media data blocks of the digital media content to be played,

[1g] such that at least one of the alternatively sequenced insertion points is positioned at a play position in the digital media content that satisfies a condition selected from: the play position being a predetermined length of time after the new play position, the play position being a predetermined number of digital media data blocks after the new play position; and

[1h] a user interface output for causing presentation of the content stream during a play period associated with one or more states of play such that a part of the digital advertising content is adaptively played at the one or more alternatively sequenced insertion points, instead of at the one or more initially sequenced insertion points; and

[1i] at least a first memory for storing a setting to indicate a first state of play, the setting including a first value to indicate presentation of a required part of the digital advertising content is in progress during presentation of the content stream such that responsive to detecting the first value in the first memory, the user interface input is disabled to prevent commands comprising at least one of a user volume control or a user navigation control from altering a course of presentation of the content stream while presentation of the required part of the digital advertising content is in progress.

2. The digital media player device as in claim 1, wherein the user interface input comprises a graphical user interface that includes a time bar to allow the user to control the course of presentation of the digital media content received to a specific point in the presentation past at least one of the one or more initially sequenced insertion points.

4. The digital media player device as in claim 1, wherein the digital media content comprises at least one media file.

5. The digital media player device as in claim 1, wherein the digital advertising content comprises at least one advertisement file.

6. The digital media player device as in claim 5, wherein a sequence is generated by sub-dividing a media file into two or more segments, and wherein at

least a part of the at least one of the advertising file is presented between two of the segments.

7. The digital media player device as in claim 4, wherein the user input results in a change of a sequence of two or more media files by at least one of subtracting an existing media file and re-arranging the sequence of two or more media files in a change of sequence by adding a new media file.

8. The digital media player device as in claim 1, wherein the user input further comprises one or more navigational choices for the content stream.

9. The digital media player device as in claim 8, wherein the one or more navigational choices are selected from a group consisting of: play, stop, pause/continue, reverse, rewind, fast-forward, slow-motion, track advance, frame-by-frame advance, go direct to point or page in sequence, advance chapter, page turn, change track, change media selection, shuttle knob, and one or more sound controls.

10. The digital media player device as in claim 1, further comprising: rotating, using an ad manager and an ad rotator, new advertising content into the content stream in response to the user input, the ad manager operative to receive ad files and select ad files for presentation from a database of ad files and the ad rotator configured to replace ad files with new ad files after the ad files have been presented.

11. The digital media player device as in claim 1, wherein the adaptively modifying uses two or more of the adaptive preference rules for determining the one or more alternatively sequenced insertion points of at least a part of the digital advertising content.

13. The device as in claim 1, the digital media player device further comprising a media file decryptor configured to receive and decrypt the digital media content during play, the media file decryptor configured to limit access to a non-volatile memory following the decryption of the digital media content.

14. The device as in claim 1, wherein the digital media player device is configured to read a data structure of the one or more data blocks of the digital media content, the data structure including a first field containing data identifying a media file associated with the digital media content, a second field containing data indicative of an ad requirement associated with the digital media content, and a third field containing data representing an ad file associated with the digital advertising content to be displayed with the media file.

15. The device as in claim 1, wherein the user interface input includes a time bar configured to control the intersplicer to alter a course of presentation of the content stream in response to the user dragging the time bar, the dragging of the time bar enabling at least one of fast-forward play, skipping forward, backward skipping to a fixed point, slow motion play, and frame advance play.

[17a] A computer-implemented system for controlling digital media presentations, the system comprising:

[17b] one or more processors;

[17c] a user interface for allowing a user to control a course of presentation of digital media content;

[17d] an intersplicer for controlling one or more insertion points of digital advertising content into the digital media content thereby sequencing the digital media content and digital advertising content, the sequencing comprising ordering one or more data blocks of the digital media content and one or more data blocks of the digital advertising content into a content stream playable as audio or visual content perceivable by the user, the content stream comprising one or more initially sequenced insertion points at which the digital advertising content is scheduled to be presented relative to the digital media content during play;

[17e] in response to user input updating a current play position in the content stream to a new play position in the content stream, the one or more processors using one or more adaptive preference rules to adaptively modify, a presentation position of the digital advertising content from at least one of the one or more initially sequenced insertion points to one or more alternatively sequenced insertion points;

[17f] the one or more alternatively sequenced insertion points being adaptively selectable by the intersplicer according to selection criteria defined by the one or more adaptive preference rules taking into account the new play position and at least one of a length of time associated with playing the digital media content, a number of digital media data blocks of the digital media content to be played, and a point in time the digital media content is to be played,

[17g] such that at least one of the alternatively sequenced insertion points is positioned at a play position in the digital media content that satisfies a condition selected from: the play position being a predetermined length of time after the new play position, the play position being a predetermined number of digital media data blocks after the new play position, and the play position being at a predetermined time of the hour after the new play position;

[17h] a user interface output for causing presentation of the content stream during a play period associated with one or more states of play such that a part of the digital advertising content is adaptively played at the one or more alternatively sequenced insertion points, instead of the one or more initially sequenced insertion points; and

[17i] at least a first memory for storing a setting to indicate a first state of play, the setting including a first value to indicate presentation of a required part of the digital advertising content is in progress during presentation of the content

stream such that responsive to detecting the first value in the first memory, the user interface is disabled to prevent commands comprising a user navigation control from altering a course of presentation of the content stream.

18. The system as in claim 17, wherein the at least first memory is part of the computer-implemented system.

19. The system as in claim 17, wherein the at least first memory is part of at least one remote system.

[21a] A computer-implemented method for controlling digital media presentations using an improved digital media player system, the method comprising:

[21b] receiving, on a digital media player system, data comprising digital media content and digital advertising content,

[21c] the digital media player system having a user interface and an intersplicer, the user interface configured to allow a user to control a course of presentation of the digital media content received,

[21d] and the intersplicer configured to control one or more initially sequenced insertion points of the digital advertising content into the digital media content;

[21e] sequencing the digital media content, using the intersplicer, the sequencing comprising ordering one or more data blocks of the digital media

content into a content stream playable as audio or visual content perceivable by the user, the content stream comprising a media section that comprises at least some of the digital media content, the content stream further comprising an advertising block within which at least some of the digital advertising content is scheduled to be presented, the advertising block being arranged within the content stream at an initially defined insertion position relative to the media section during play;

[21f] adaptively re-sequencing the content stream into a modified content stream to reflect a user input comprising updating a current play position to a new play position in the digital media content detected at the digital media player system, the modified content stream comprising an alternate insertion position of the advertising block relative to the media section, the adaptively re-sequencing comprising determining the alternate insertion position using one or more adaptive preference placement rules associated with the digital media content;

[21g] the alternate insertion position being adaptively selectable by the intersplicer according to selection criteria defined by the one or more adaptive preference placement rules taking into account the new play position and at least one of a length of time associated with playing the digital media content, a number of digital media data blocks of the digital media content to be played, and a point in time the digital media content is to be played,

[21h] such that the alternate insertion position is positioned at a play position in the digital media content that satisfies a condition selected from: the play position being a predetermined length of time after the new play position, the play position being a predetermined number of digital media data blocks after the new play position, and the play position being at a predetermined time of the hour after the new play position;

[21i] causing presentation of the modified content stream at the digital media player system during a play period associated with one or more states of play;

[21j] causing adaptive presentation of a required part of the digital advertising content at the alternate insertion position, instead of at the one or more initially sequenced insertion points;

[21k] keeping a setting, in at least a first memory of the digital media player system, to indicate a first state of play, the setting including a first value to indicate presentation of the required part of the digital advertising content is in progress during presentation of the modified content stream; and

[21l] responsive to detecting the first value in the first memory, disabling user interface commands comprising a user navigation control that enables the user to alter a course of presentation of the modified content stream.

[22a] A computer-implemented method for controlling digital media presentations using an improved digital media player system, the method comprising:

[22b] transmitting, by at least one remote system to a digital media player system, data comprising digital media content and digital advertising content,

[22c] the digital media player system having a user interface and an intersplicer, the user interface configured to allow a user to control a course of presentation of the digital media content received,

[22d] and the intersplicer for controlling one or more insertion points of the digital advertising content into the digital media content;

[22e] sequencing the digital media content, using the intersplicer, the sequencing comprising ordering one or more data blocks of the digital media content into a content stream playable as audio or visual content perceivable by the user, the content stream comprising a media section that comprises at least some of the digital media content, the content stream further comprising an advertising block within which at least some of the digital advertising content is scheduled to be presented during play, the advertising block being arranged within the content stream at an initially defined insertion position relative to the media section;

[22f] adaptively re-sequencing the content stream into a modified content stream to reflect a user input comprising updating a current play position to a new

play position in the digital media content detected at the digital media player system, the modified content stream comprising an alternate insertion position of the advertising block relative to the media section, the adaptively re-sequencing comprising determining the alternate insertion position using one or more adaptive preference placement rules associated with the digital media content during play;

[22g] the alternate insertion position being adaptively selectable by the intersplicer according to selection criteria defined by the one or more adaptive preference placement rules taking into account the new play position and at least one of a length of time associated with playing the digital media content, a number of digital media data blocks of the digital media content to be played, and a point in time the digital media content is to be played

[22h] such that the alternate insertion position is positioned at a play position in the digital media content that satisfies a condition selected from: the play position being a predetermined length of time after the new play position, the play position being a predetermined number of digital media data blocks after the new play position, and the play position being at a predetermined time of the hour after the new play position;

[22i] causing presentation of the modified content stream at the digital media player system during a play period associated with one or more states of play;

[22j] causing adaptive presentation of a required part of the digital advertising content at the alternate insertion point, instead of the initially defined insertion position;

[22k] keeping a setting, in at least a first memory of the digital media player system, to indicate a first state of play, the setting including a first value to indicate presentation of the required part of the digital advertising content is in progress during presentation of the modified content stream; and

[22l] responsive to detecting the first value in the first memory, disabling user interface commands comprising a user navigation control that enables the user to alter a course of presentation of the content stream.

23. The method as in claim 22, wherein presentation data comprising an indication of the digital advertising content that has been presented is stored in a second memory of the digital media player system.

CERTIFICATE OF SERVICE

The undersigned hereby certifies that on November 1, 2024, true and correct copies of the foregoing Petition for *Inter Partes* Review of U.S. Patent No. 10,986,403 and Exhibits 1001-1026 were served in entirety on the Patent Owner at the following addresses of record as listed on Patent Center, via Priority Mail Express®:

Mintz Levin/San Diego Office
One Financial Center
Boston, MA 02111
Official Correspondence Address

The undersigned certifies that true and correct copies of the foregoing Petition for *Inter Partes* Review of U.S. Patent No. 10,986,403 and Exhibits 1001-1026 were also sent via electronic mail to the attorneys of record for Plaintiff in the related litigation matter(s):

Robert Francois Kramer
rkramer@krameralberti.com
Charles S. Barquist
cbarquist@mabr.com
Curt Holbreich
cholbreich@krameralberti.com
David L Alberti
dalberti@krameralberti.com
Hong Syd Lin
hlin@krameralberti.com

Jeremiah A Armstrong
jarmstrong@krameralberti.com
Robert C. Mattson
rmattson@krameralberti.com
Russell S Tonkovich
rtonkovich@krameralberti.com
Sal Lim
slim@krameralberti.com
Zachariah Allen Higgins
zhiggins@krameralberti.com

SHEPPARD, MULLIN,
RICHTER & HAMPTON LLP

/Harper Batts/
Harper Batts (Reg. No. 56,160)
Attorneys for Petitioner

Date: November 1, 2024

1540 El Camino Real Suite 120
Menlo Park, CA 94025
Tel: (650) 815-2673

**CERTIFICATE OF COMPLIANCE WITH
TYPE-VOLUME LIMITATION, TYPEFACE REQUIREMENTS,
AND TYPE STYLE REQUIREMENTS**

1. This Petition complies with the type-volume limitation of 14,000 words, comprising 13,330 words, as counted using the Microsoft Word software that was used to prepare this paper, excluding the parts exempted by 37 C.F.R. § 42.24(a).

2. This Petition complies with the general format requirements of 37 C.F.R. § 42.6(a) and has been prepared using Microsoft® Word in 14-point Times New Roman.

Respectfully submitted,

SHEPPARD, MULLIN,
RICHTER & HAMPTON LLP

/Harper Batts/
Harper Batts (Reg. No. 56,160)
Attorney for Petitioner

Date: November 1, 2024

1540 El Camino Real Suite 120
Menlo Park, CA 94025
Tel: (650) 815-2673