

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. IPR2025-00081

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. Patent No. 7,877,766 ("Wu")
1005	U.S. Pat. App. Pub. No. 2003/0200128 ("Doherty")
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	U.S. Pat. App. Pub. 2002/0083439 ("Eldering-I")
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	WO 02/49343 ("Leaning")
1026	US 2003/0154295 ("Mangold")
1027	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-1013, ¶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

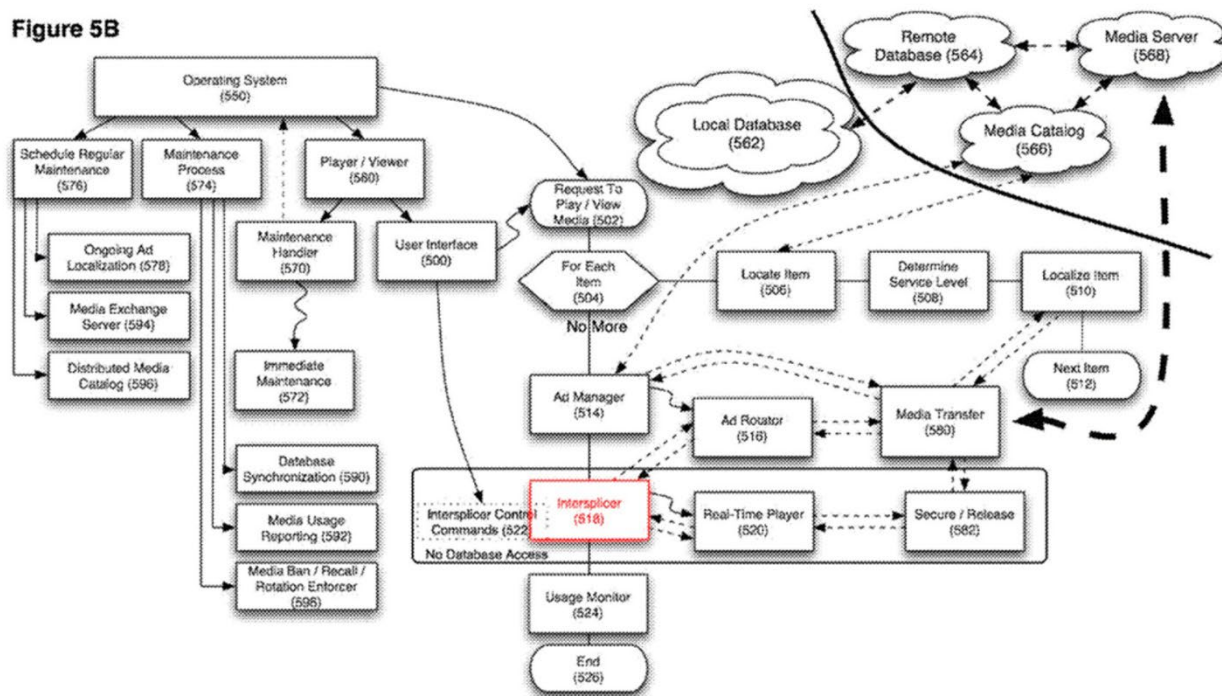
content in media content.” Ex-1003, ¶20. Claims of the ’403 patent recite that the intersplicer controls the insertion and conveyance of advertising content in media content, including, for example, “controlling one or more insertion points of the digital advertising content into the digital media content 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	1, 2, 4–11, 13– 15, 17– 19, 21–23	§ 103	Wu in view of Doherty
2	2, 15	§ 103	Wu in view of Doherty and Crow
3	13	§ 103	Wu in view of Doherty 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).

¹ Pre-AIA 35 U.S.C. §102 applies. MPEP §2159.02.

A. Ground 1

1. Wu (Ex-1004)

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

Wu “relates to the field of digital media streams” (Ex-1004, 1:6-9) and teaches providing non-skippable advertisements. Ex-1004, Abstract, 2:46-2:59; Ex-1003, ¶32.

Wu teaches a digital recording/play back system that prevents the user from entirely skipping the advertisement by displaying a sub-advertisement that is selected based on multiple factors. *E.g.*, Ex-1004, 2:36-45, 5:40-55, 7:6-22, 7:63-8:12, 8:36-45. This sub-advertisement may be displayed as a full-screen display while the media stream is stopped or paused. Ex-1004, 8:36-9:28, 3:24-35, 5:40-55, Figs. 5A-5E. During playback of a sub-advertisement, user input such as skipping and fast forwarding is disabled. *Id.*; Ex-1003, ¶33.

Wu is in the same field of endeavor as the ’403 patent (media display). *See supra* §III; *e.g.*, Ex-1004, 1:6-9; Ex-1003, ¶34.

2. Doherty (Ex-1005)

Doherty is prior art under at least pre-AIA §102(e) because it was filed before June 27, 2002. Ex-1003, ¶36.

Doherty teaches a scheduler that selects advertisements and other items of information for a user and creates a schedule that includes references to the ads.

Ex-1005, ¶31, ¶38, Fig. 2. In response to a user input, the scheduler clears the schedule and re-schedules the advertisements and other items of information based on their associated priorities. Ex-1005, ¶30, ¶57, Fig. 10. Doherty teaches an output compiler that receives a reference to ads from the scheduler and in response, obtains the ads from a local storage and outputs them for display. Ex-1005, ¶¶27-28, ¶¶54-55, Fig. 1, Fig. 8; Ex-1003, ¶37.

Doherty is in the same field of endeavor as the '403 patent (media display) and is reasonably pertinent to the problem with which the '403 patent is concerned. *See supra* §III; *e.g.*, Ex-1005, Abstract, ¶1, ¶¶2-4, ¶¶7-12, ¶27; Ex-1001, 1:16-25, 1:27-2:10, 6:26-7:18, 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, ¶¶40-44.

Wu teaches a **digital media player device/a computer-implemented system** (e.g., “electronic digital recording/play back device” or “system”)² ([1a]/[17a]) that provides digital media content (e.g., media stream) to users. *E.g.*, Ex-1004, 4:39-53, 5:40-55, 2:18-59, Fig. 1:

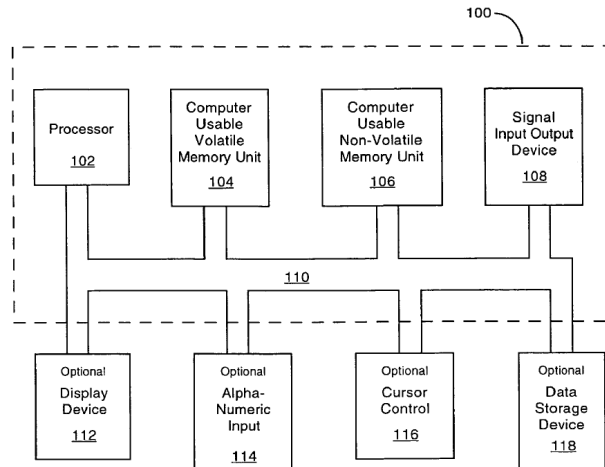


Fig. 1

Fig. 2:

² Wu refers to Figure 1 as describing “electronic digital recording/play back *system* 100” and “electronic digital recording/play back *device* 100.” Ex-1004, 4:39-5:39. A POSITA would have understood that Wu contemplates integrating the components shown in Figure 1 into one device, such as a laptop computer. Ex-1004, 4:39-53, 1:13-41.

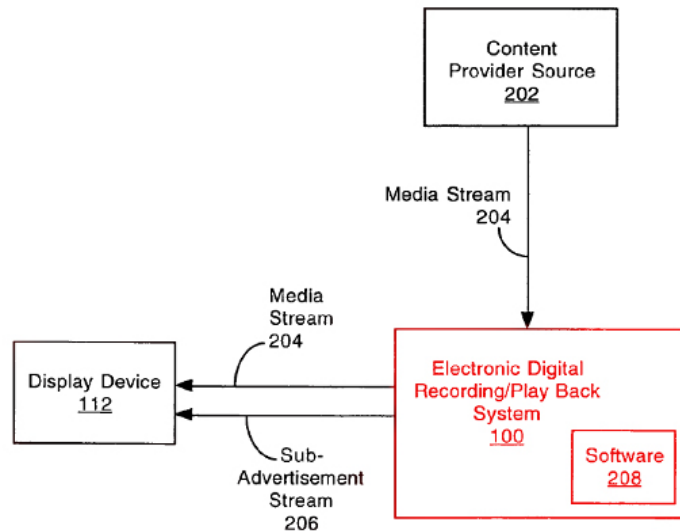


Fig. 2

Ex-1003, ¶41.

Wu’s electronic digital recording/play back device/system **controls digital media presentations** because it controls how media content is played back based on user inputs such as skip and fast forward. *E.g.*, Ex-1004, 1:42-63 (“[D]uring play back of a previously recorded television show, the electronic digital recording/play back device also enables its user to fast forward or skip through all or some of the recorded television show.”); Ex-1003, ¶42.

Operations of Wu’s electronic digital recording/play back device/system, as modified based on Doherty’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, Abstract (“A *method* and system of providing a non-skippable sub-advertisement stream.”)³, 2:36-2:59; Ex-1003, ¶43.

[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,

Wu teaches that the electronic digital recording/play back device/system is coupled to a remote content provider source via a network. Ex-1004, 5:56-6:11 (“Network 200 includes *a content provider source 202 (e.g., television broadcast company, the Internet, television cable company, and the like)* coupled to electronic digital recording/play back system 100[.]”), Fig. 2:

³ All annotations/emphasis added unless otherwise noted.

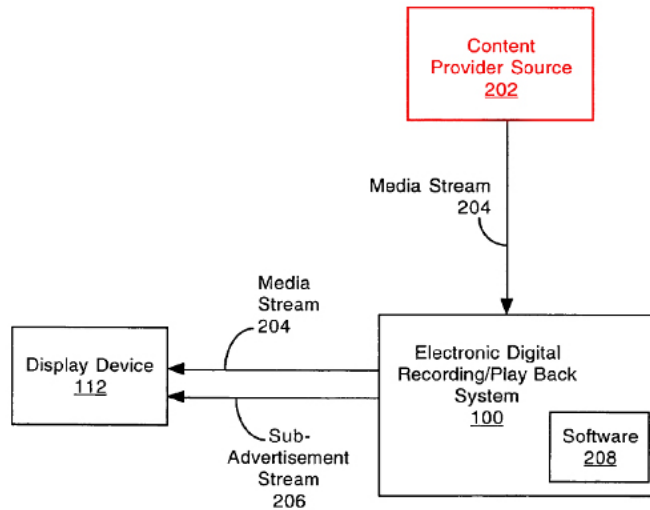


Fig. 2

Ex-1003, ¶45.

Wu’s content provider source transmits and its client-side device/system receives a digital media stream that includes advertisements. Ex-1004, 4:39-53, 5:56-6:11, 6:31-49 (“[T]he *electronic digital recording/play back system 100* (FIG. 2) *receives media stream 204 output by content provider source 202* and digitally records it.”), 7:23-43 (“[A]n advertisement of recorded media stream 204...”), 7:63-8:12, 8:20-35, Figs. 2–3, Fig. 4B. Thus, Wu teaches **receiving, on a digital media player system** (e.g., electronic digital recording/play back system), **data comprising digital media content and digital advertising content** (e.g., a digital media stream that includes advertisements) ([21b]) and **transmitting, by at least**

one remote system (e.g., content provider source) **to a digital media player system, data comprising digital media content and digital advertising content** ([22b]). Ex-1003, ¶46.

Wu teaches that the electronic digital recording/play back device/system comprises **one or more processors** ([1b], [17b]). Ex-1004, 4:39-5:5 (“[C]ertain processes and steps are ... executed by *processors* of system 100.”), Fig. 1:

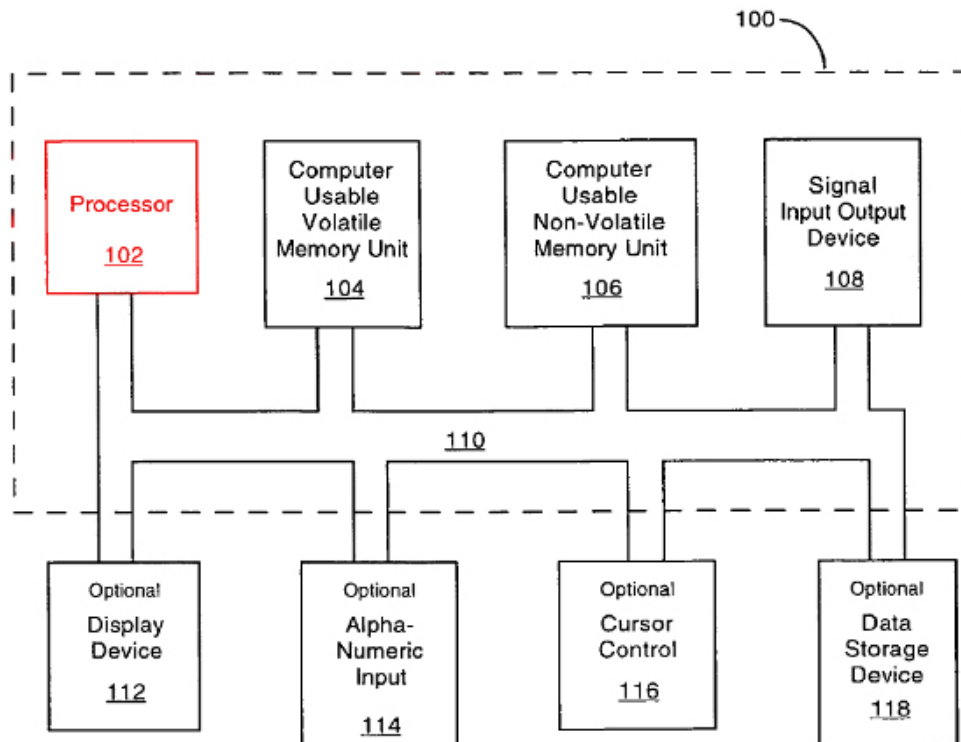


Fig. 1

The processors are **for receiving data comprising digital media content and digital advertising content** ([1b]) because they execute instructions for corresponding operations. Ex-1004, 4:39-53, 5:56-6:11, 7:23-43, 6:31-49, 8:20-35, Fig. 3, Fig. 4B; Ex-1003, ¶47. Therefore, Wu teaches limitations [1b], [17b], [21b], and [22b]. Ex-1003, ¶¶45-48.

[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,

Wu teaches that its electronic digital recording/play back device/system includes **a user interface (input)** ([1c], [17c], [21c], [22c]) based on input devices such as a cursor control or cursor directing device, an alphanumeric input device, and a display, which receive user input and control media display accordingly. Ex-1004, 5:18-34; Ex-1003, ¶49.

Wu's user interface input **allows a user to control a course of presentation of the digital media content received** ([1c], [17c], [21c], [22c]) with inputs such as skip or fast forward. *See supra* §V.A.3[1a]/[17a]/[21a]/[22a]; Ex-1004, 1:42-63, 2:24-35, 5:19-34, 5:40-55, 7:6-22. As explained below, the combination of Wu and Doherty further teaches **an intersplicer** ([21c], [22c]). *Infra* §V.A.3[1d]/[17d]/[21d]/[22d]; Ex-1003, ¶50. The combination of Wu and Doherty teaches limitations [1c], [17c], [21c], and [22c]. Ex-1003, ¶¶49-51.

[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];

Wu teaches that its digital media player device (e.g., electronic digital recording/play back device) records and displays a media stream. Ex-1004, 5:40-55, 6:31-49. Software on the electronic digital recording/play back device creates a time table that includes time intervals for advertisements, which controls where advertising content is inserted. Ex-1004, 7:23-37 (“FIG. 4A illustrates ... a time table 400 ... which may be created and utilized by software 208 ... the specific

time intervals of the advertisements (e.g., 402 and 404) are stored within time table 400 ...”), Fig. 4A:

Time Table
400

Advertisement Time Intervals	
Ad 402	1200-1260 sec.
Ad 404	2340-2400 sec.
⋮	⋮
⋮	⋮
⋮	⋮

Fig. 4A

Ex-1003, ¶52.

Furthermore, as explained below, Wu teaches that its digital media player device (e.g., electronic digital recording/play back device) displays an advertisement (e.g., sub-advertisement) in response to a user input changing a play position of a media stream. *E.g.*, Ex-1004, 2:24-35, 5:40-55, 8:36-45; *infra* §V.A.3[1e]/[17e]/[21f]/[22f]. The advertisement to display is selected based on “a wide variety of parameters.” Ex-1004, 7:63-8:12; *infra* §§V.A.3[1e-f]/[17e-f]/[21f-g]/[22f-g]; Ex-1003, ¶53.

Wu teaches implementing functionalities of its device using software. Ex-1004, 4:39-53. Wu thus contemplates a software component that selects

advertisements and controls their insertion and conveyance (e.g., display) in media content, which teaches an **intersplicer**. Ex-1003, ¶54.

By creating a time table with time intervals for advertisements and recording and displaying a content stream with advertisements inserted at the time intervals, Wu's software **controls one or more insertion points of the digital advertising content into the digital media content** ([1d], [17d], [22d]). The time intervals are allocated for advertising content in the received media stream, so they correspond to **initially sequenced insertion points 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, 5:40-55, 6:31-49, 7:23-37, Fig. 4A. It follows that Wu's software is **configured to control one or more initially sequenced insertion points of the digital advertising content into the digital media content** ([21d]). Ex-1003, ¶55.

By recording and displaying a content stream with advertisements inserted at the time intervals, Wu teaches **sequencing 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 (e.g., media stream 204) ([1d], [17d], [21e], [22e]).⁴ Ex-1004, 6:31-49, 7:23-37, Fig. 3, Fig. 4B:

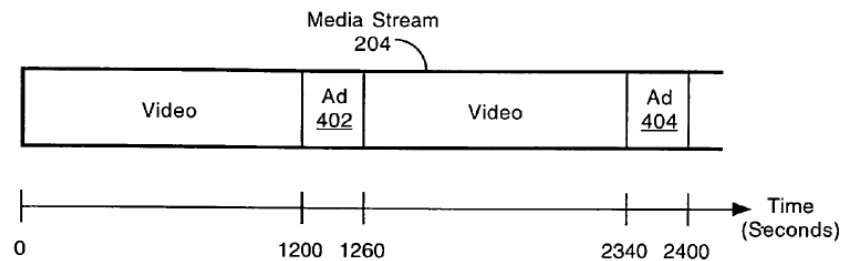


Fig. 4B

Wu's time table separates the time intervals for media sections (e.g., 0-1200, 1260-2340) from those for advertisement blocks (e.g., 1200-1260, 2340-2400). Ex-1004, 6:31-49, 7:23-37, Figs. 4A-4B. Thus, Wu 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, ¶56.

This content stream is **playable as audio or visual content perceivable by the user** ([1d], [17d], [21e], [22e]). *E.g.*, Ex-1004, 6:31-49, 7:44-62; Ex-1003, ¶57.

⁴ Digital media content in video or audio form was conventionally encoded and distributed in terms of data blocks. *See, e.g.*, Ex-1008, 1:34-41; Ex-1009, 5:54-65.

To the extent Wu does not single out a particular software component with functionalities corresponding to an “intersplicer,” Doherty teaches an intersplicer (e.g., scheduler) that controls insertion and conveyance of advertising content in media content. Ex-1005, ¶¶27-28 (“The apparatus 1 comprises ... a Scheduler 140[.]”), Fig. 1:

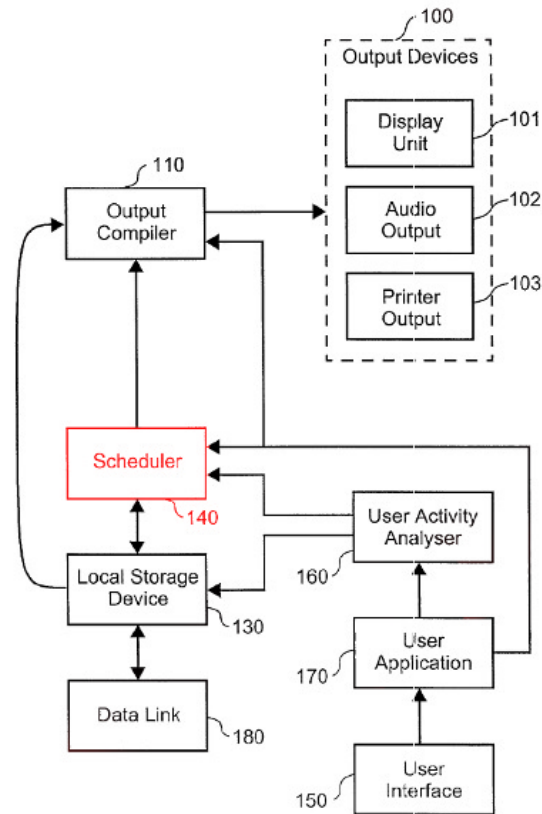


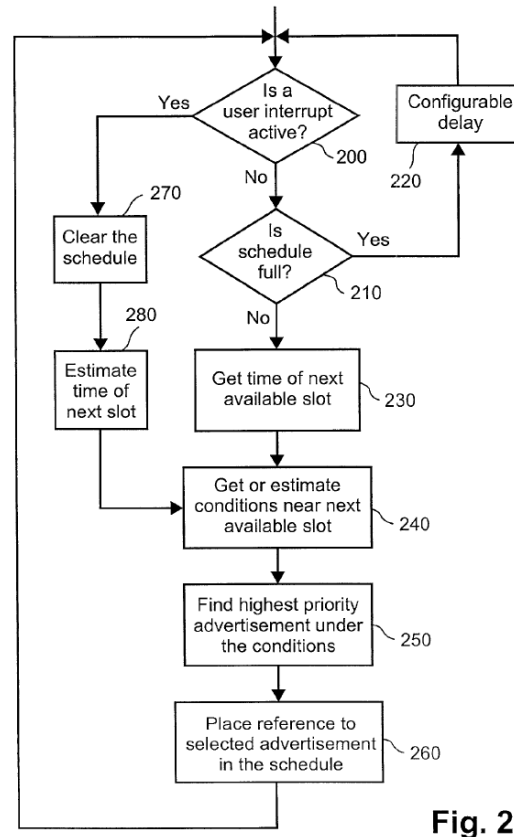
Fig. 1

Ex-1003, ¶58.

Doherty’s scheduler “outputs a schedule” and “records a log of advertisements and other items of information to be scheduled and displayed by the output devices [.]” Ex-1005, ¶29. The scheduler selects advertisements and

other items of information for a user and places their references in a schedule. Ex-1005, ¶31, ¶38 (“A reference to the advertisement is placed in the schedule[.]”),

Fig. 2:



Ex-1003, ¶59.

In response to a user input, the scheduler reschedules the advertisements and other items of information. *Infra* §V.A.3[1e]; Ex-1005, ¶30, ¶57, Fig. 10:

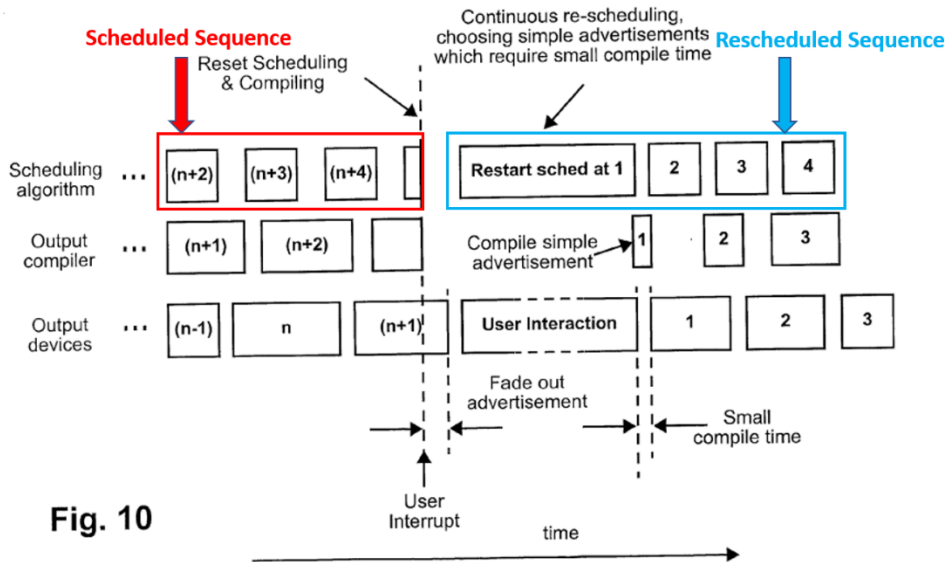


Fig. 10

Ex-1003, ¶60.

Doherty's scheduler teaches an **intersplicer** because it selects advertising content and controls insertion and conveyance of advertising content in media content (e.g., other items of information) by scheduling and rescheduling advertisements. *Supra* §IV.A. Doherty's scheduler **controls one or more insertion points of the digital advertising content** (e.g., advertisements) **into the digital media content** (e.g., other items of information) ([1d], [17d], [22d]). Since advertisements are inserted between other items of information, Doherty's existing schedule (a schedule used prior to an interrupt) includes **initially sequenced insertion points at which the digital advertising content is scheduled to be presented relative to the digital media content during play** ([1d], [17d], [21e], [22e]). Ex-1005, ¶25, ¶29, ¶¶37-38, ¶57, Figs. 2, 10. Here, the 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, ¶61.

In this way, the 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 (e.g., data blocks of non-advertisement items of information) and one or more data blocks of the digital advertising content (e.g., data blocks of advertisements) into a content stream ([1d], [17d], [21e], [22e]). Ex-1005, ¶25, ¶29, ¶¶37-38, ¶57 (“While the scheduling process 140 schedules advertisement (n+2), the output compiler 110 compiles advertisement (n+1) and the output devices 100 play advertisement (n-1) followed by advertisement n.”), Fig. 2, Fig. 10:

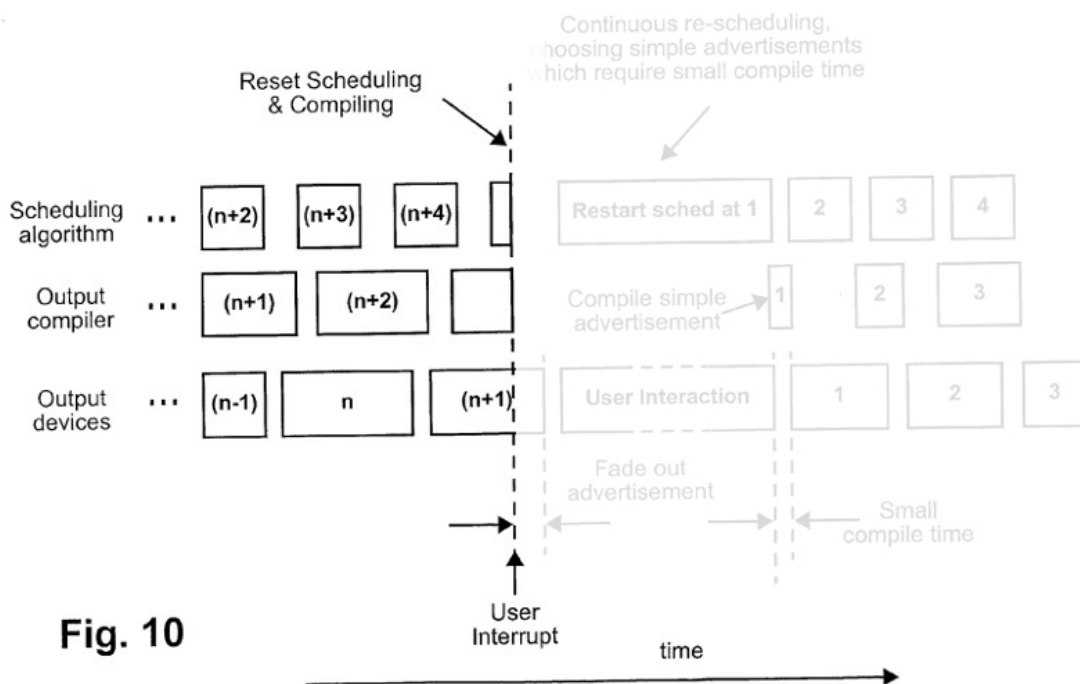


Fig. 10

Doherty's existing schedule defines the relative positions of media sections (e.g., one or more non-advertisement items of information) and advertisement blocks (e.g., one or more advertisements). Ex-1005, ¶25, ¶29, ¶¶37-38, ¶52, ¶57, Figs. 2, 10. Thus, Doherty 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, ¶62.

This content stream is **playable as audio or visual content perceivable by the user**. Ex-1005, ¶27; Ex-1003, ¶63.

A POSITA would have found it obvious to apply Doherty's teachings regarding its scheduler with Wu because Wu contemplates such a software component. Doherty's scheduler is a suitable approach for implementing Wu's advertisement selection and scheduling functionalities. This is at least because Wu and Doherty are both directed to displaying advertisements among other media content and it was common to divide media content (e.g., TV programs) into sections, each including an item of information. The combination simply involves applying a known technique (e.g., functionalities of Doherty's scheduler) to a

known device (e.g., Wu’s electronic digital recording/play back device) to yield predictable results. A POSITA would have had a reasonable expectation of success in applying Doherty’s teachings to Wu because software solutions for selecting and scheduling media were well known. Furthermore, a POSITA would have been motivated to apply Doherty’s teachings about the scheduler to Wu because the scheduler’s priority-based mechanism for scheduling advertisements provides multiple benefits, including facilitating scheduling suitable advertisements for the user at the right time, enabling synthesizing multiple factors in selecting and scheduling advertisements, and improving user experience by allowing delayed display of advertisement and ensuring that advertisements are viewed by the user. *Infra* §V.A.3[1e]/[17e]/[21f]/[22f]; Ex-1003, ¶64.

The combination of Wu and Doherty teaches “intersplicer” even under Patent Owner’s proposed construction. *Supra* §IV.A; Ex-1015, 000006, 000012. First, the combination teaches **enforcing the conveyance of advertisements** by managing insertion of advertisements to the media stream. (e.g., Ex-1005, ¶29, ¶¶37-39, ¶57; *infra* §V.A.3[1e]/[17e]/[21f]/[22f]; Ex-1003, ¶65) and disabling the user’s ability to turn off, fast forward through, or skip over them (Ex-1004, 8:46-57, 2:18-23, 2:36-45; *infra* §V.A.3[1i]/[17i]/[21k-l]/[22k-l]). Ex-1003, ¶66.

Second, Wu limits the user’s access to digital media content, for example, by pausing the digital media content when an advertisement is displayed and

preventing the user to skip the advertisement. Ex-1004, 8:36-57; *infra* §V.A.3[1i]/[17i]/[21k-l]/[22k-l]. This teaches or suggests **digital rights management software**. Ex-1003, ¶67. It would also have been obvious to implement widely known digital rights management functionalities with Wu and Doherty. *Infra* §V.A.11; *see* Ex-1017; Ex-1018; *e.g.*, Ex-1004, 5:40-55; Ex-1003, ¶68.

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. *See, e.g.*, Ex-1019, ¶¶13-14; Ex-1020, 1:57-65; Ex-1021, ¶11; *see* Ex-1001, 1:60-2:10; Ex-1003, ¶69. By allowing the user to use well-known and conventional control functionalities (*e.g.*, Ex-1004, 1:42-63; *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, ¶70.

[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 **user input 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]; Wu teaches user input (e.g., skipping, fast forwarding) for skipping over or fast forwarding through a content stream. Ex-1004, 1:42-63, 5:40-55, 7:6-22, 2:24-35, 5:6-34, Fig. 1; *supra*

§V.A.3[1c]/[17c]/[21c]/[22c]. A user may skip over or fast forward through a portion of a content stream where an advertisement is inserted, thereby bypassing at least part of the advertisement and a portion of digital media content. Ex-1004,

5:40-55, 7:6-22, 2:24-35; *supra* §V.A.3[1c]/[17c]/[21c]/[22c]; Ex-1014, ¶19; Ex-1003, ¶72.

Skipping over content updates the play position from a position preceding the skipped over portion to a position subsequent to the skipped over portion. *See, e.g.*, Ex-1014, ¶21; Ex-1023, ¶34, ¶36, Fig. 5; Ex-1022, ¶¶10-15, Fig. 1. Fast forwarding updates a current play position from where the fast forwarding starts, to a new play position where the fast forwarding ends. *See, e.g.*, Ex-1014, ¶19; Ex-1004, 2:24-35, 5:40-55, 6:50-58. The updating of the play position occurs when at least part of an advertisement is bypassed. *See, e.g.*, Ex-1014, ¶21; Ex-1023, ¶36, ¶34, Fig. 5; Ex-1003, ¶73.

Doherty teaches, in response to receiving a user input, generating an interrupt causing rescheduling of the items of information to be displayed. Ex-1005, ¶¶8-12, ¶25, ¶30, ¶¶56-57, Figs. 8-10. Because Doherty teaches displaying video content (*e.g.*, Ex-1005, ¶27) and does not limit user input to certain types (*e.g.*, *id.*, ¶¶30-32, ¶36), a POSITA would have found it obvious for Doherty to provide users commonplace functionalities such as skipping and fast forwarding, as taught by Wu. Ex-1003, ¶74.

Second, the combination teaches changing the insertion points/positions of advertising content in response to user input (*e.g.*, skipping, fast forwarding). The combination teaches that the content stream comprises one or more initially

sequenced insertion points for digital advertising content. *Supra* §V.A.3[1d]/[17d]/[21e]/[22e]; Ex-1004, 6:31-49, 7:23-37, Figs. 4A-4B; Ex-1005, ¶25, ¶29, ¶37-38, ¶57, Figs. 2, 10; Ex-1003, ¶75. Wu teaches displaying a “sub-advertisement” in response to a user input skipping over or fast forwarding through an advertisement. Ex-1004, 2:24-35, 5:40-55 (“[W]hen a user of electronic digital recording/play back system 100 causes it to fast forward through or skip over a recorded television advertisement of media stream 204, an overlay sub-advertisement stream 206 corresponding to the skipped advertisement is displayed ...”), Fig. 2. The sub-advertisement can be inserted by pausing the digital media stream. Ex-1004, 8:36-45 (“For example, the output of the recorded media stream 204 to display device 112 may be stopped or paused while the present embodiment outputs sub-advertisement stream 206 as a full screen display to display device 112.”); Ex-1003, ¶76.

The sub-advertisement is displayed “once the user resumes watching the recorded television show in normal playback mode.” Ex-1004, 2:24-35, 8:36-45. As a POSITA would have realized, obvious options include displaying the sub-advertisement (1) immediately when normal playback resumes or (2) after normal playback has been resumed for a period of time. Ex-1014, ¶10, ¶27 (“[T]he alternative advertisement may be rendered to the user later in time after play out of content is resumed.”), ¶32; Ex-1003, ¶77.

As Wu does not limit the timing for displaying the sub-advertisement, Doherty complements Wu by teaching a mechanism for rescheduling advertising content using priority-based rules. Ex-1003, ¶78.

Doherty teaches that, when there is a user input (*supra* §V.A.3[1c]/[17c]/[21c]/[22c]), the scheduler clears the existing schedule and reschedules advertisements and other items of information in response to the user input. Ex-1005, ¶30 (“Once the user commences interacting with the user interface 150, a user interrupt is generated by the user application module 170. The user interrupt is supplied to the scheduler 140, in response to which the schedule is cleared and rescheduling is undertaken.”), ¶39, ¶57 (“During the period of user interaction the scheduling process 140 continuously re-schedules the advertisements expecting the user to finish at any time.”), Fig. 10:

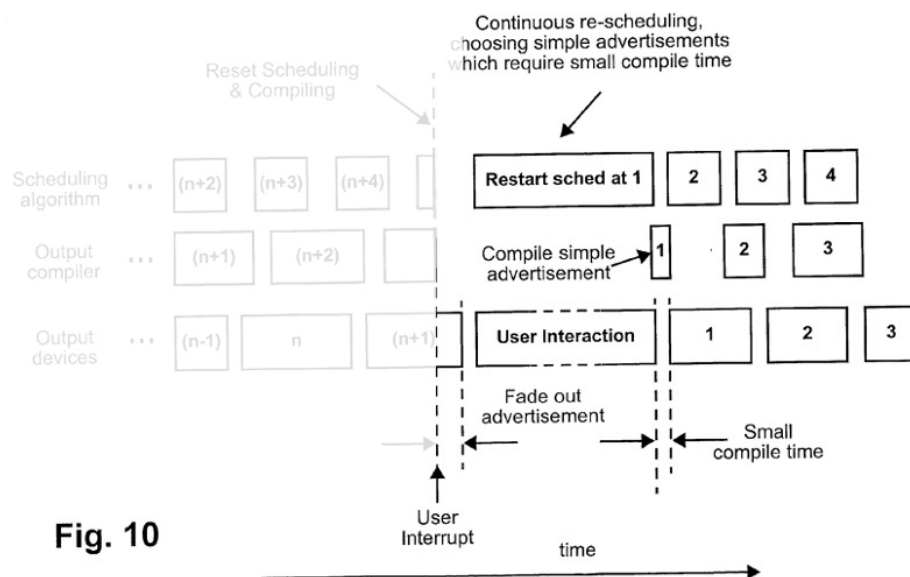


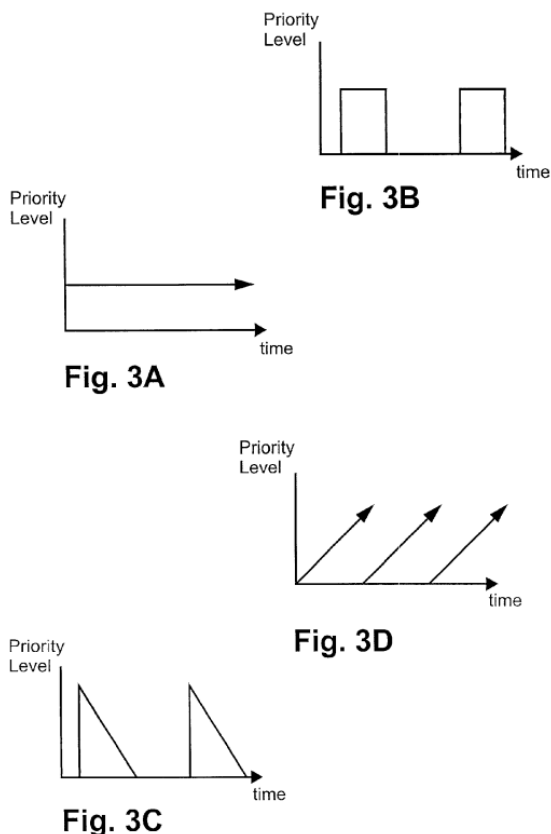
Fig. 10

Ex-1003, ¶79.

Doherty's rescheduling modifies the presentation position of the advertisements by changing the advertisement insertion points. For example, an advertisement may be moved from the second place among upcoming items of information in the schedule to the third place. This changes the insertion point of this advertisement. As another example, an existing schedule having an upcoming news item followed by a first advertisement may be replaced with an updated schedule having two upcoming news items followed by a second advertisement, which may or may not be the same as the first advertisement. This changes the insertion point of advertisements as a category. Ex-1003, ¶80.

The scheduler dynamically reschedules the items of information based on changing conditions, including an estimation of the next available advertising time slot and the priority levels of the items of information. Ex-1005, ¶25 (“[T]he system determines the priority of each item of information in the data base under the conditions at the particular time and selects the item of information with the highest priority. ... The process will then schedule items of information for the current estimated time.”), ¶39 (“The estimate of the next available advertising time slot is obtained in the next step 280 by assuming that the user will finish in a relatively short time.”), ¶57, Figs. 2, 10. For any available time slot, the item of information with the highest priority is scheduled. *Infra*

§V.A.3[1f]/[17f]/[21g]/[22g]; Ex-1005, ¶40, ¶48, ¶52, Fig. 6. The priority levels of items of information can change over time. Ex-1005, ¶¶49-50, Figs. 3A-3D:



Ex-1003, ¶81.

Wu and Doherty teach scheduling the same advertisement or a different advertisement for the alternatively sequenced insertion point. For example, Wu teaches that its sub-advertisement may or may not correspond to the skipped advertisement. Ex-1004, 7:44-62, 7:63-8:12. In light of Wu's teachings, a POSITA would have found it obvious for the sub-advertisement to be the same as the skipped advertisement, a modified version of the skipped advertisement, or a different advertisement. Doherty's scheduler selects advertisements based on time-

dependent priority levels. Ex-1005, ¶40, ¶48, ¶¶49-50, ¶52, Figs. 3A-3D, 6.

Because an advertisement in an existing schedule may or may not have the highest priority for the purpose of creating a new schedule, Doherty contemplates scheduling the same advertisement or a different advertisement to the alternatively sequenced insertion point. Ex-1003, ¶82.

A POSITA would have found it obvious and been motivated to apply Doherty's teachings with Wu, such that, in response to a user input skipping over or fast forwarding through an original advertisement, advertisements are dynamically rescheduled into the media stream based on priority factors. The combination of Wu and Doherty 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., positions for advertising content in original schedule) **to one or more alternatively sequenced insertion points** (e.g., positions for advertising content in newly created schedule) **in the digital media content in response to user input** ([1e], [17e]). Given the changing priority levels of the items of information, Doherty 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 changing the play position based on the user input and rescheduling advertising content in response, the combination of Wu and

Doherty 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) **to reflect the user input, where the modified content stream comprises an alternate insertion position of the advertising block** (e.g., position for advertising content in newly created schedule) **relative to the media section** ([21f], [22f]). Ex-1003, ¶83.

Modifying Wu based on Doherty would have been simply using a known technique (e.g., Doherty's dynamic scheduling of advertisements) to improve similar devices (e.g., Wu's digital media player device) in the same way that the scheduling technique is applied in Doherty. Wu's device is similar to that of Doherty in that both devices are directed to digital media contents. Ex-1004, Abstract, 1:7-9, 2:36-3:4, 5:40-55, 6:50-7:22, Figs. 2-3; Ex-1005, Abstract, ¶1, ¶¶26-29, ¶¶31-34, Fig. 1. Similar to Doherty's insertion of advertisements among other items of information, Wu teaches inserting advertisements among segments or blocks of a media stream. *E.g.*, Ex-1004, 7:23-37, Fig. 4B. Both references teach re-scheduling advertisements after a user input. Ex-1005, ¶30, ¶39, ¶57, ¶25, Fig. 10; Ex-1004, Abstract, 2:24-35, 3:40-55, 6:59-7:22, 7:35-62, 8:20-45. By not limiting the time for rescheduled advertising content, Wu invites a technique for choosing a suitable time, such as that taught by Doherty. Ex-1003, ¶84.

Doherty's priority-based selection and scheduling is readily applicable to Wu. Doherty schedules items of information based on priority profiles that are functions of time, where the item with highest priority at a point in time is played.

Ex-1005, Abstract, ¶¶7-12, ¶40, ¶¶48-50, ¶52, Figs. 3A-3D, 6:

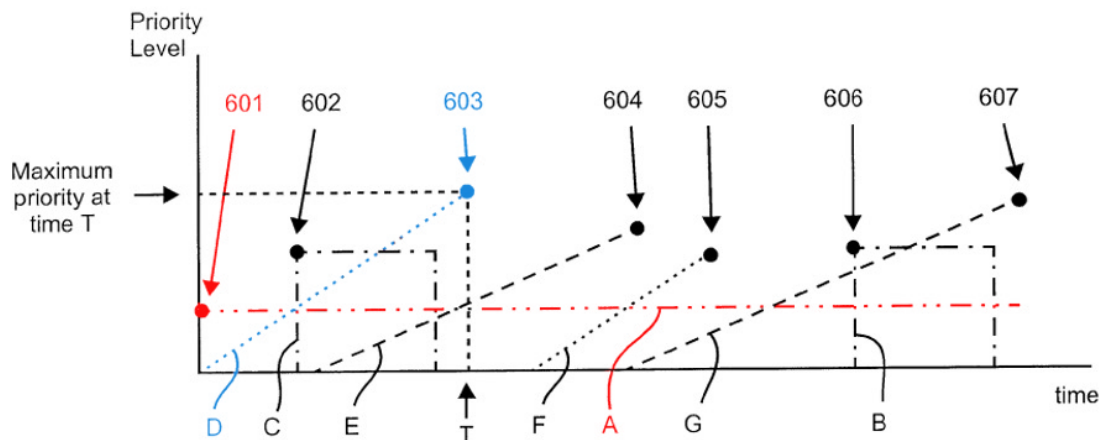


Fig. 6

Ex-1003, ¶85. For example, the item with priority profile A has a flat priority level.

Ex-1005, ¶52, ¶49, Fig. 3A. This item is scheduled to be played at time 601, when

it has the highest priority. Ex-1005, ¶52, Fig. 6. The item with priority profile D

has a “ramp profile,” with a priority level that increases with time until the item is

played. Ex-1005, ¶50, ¶52, Fig. 3D. This item is scheduled to be played at time

603, when its priority level is higher than the priority profile A. Ex-1005, ¶52, Fig.

6; Ex-1003, ¶86.

There are various obvious ways to apply Doherty's priority-based scheduling to Wu. For example, a POSITA would have found it obvious to give

Wu's digital media content (e.g., television programming) a flat priority profile and an advertisement a ramp profile. This arrangement provides an advertisement-free period before the priority level of the advertisement exceeds that of the digital media content, when the advertisement is played. Afterwards, the advertisement's priority level returns to a low level, and the digital media content resumes. *See* Ex-1005, ¶¶48-50, Fig. 3A (exemplary flat priority profile), Fig. 3D (exemplary ramp priority profile); Ex-1003, ¶87. A similar arrangement can be implemented by giving advertisements periodical rectangle profiles. *See* Ex-1005, ¶¶48-49, Fig. 3B (exemplary rectangle priority profile); Ex-1003, ¶88. As another example, Wu's digital media content can be assigned a zero priority level right after a user input, before the priority level is changed to a higher value after a period of time. *See* Ex-1005, ¶48. This arrangement allows an advertisement to be presented right after the user input, thereby prioritizing the interest of securing advertisement exposure. Ex-1003, ¶¶89-90.

A POSITA would have been motivated to apply Doherty's teachings to Wu for multiple reasons. First, Doherty's rescheduling of advertisements based on priorities facilitates scheduling suitable advertisements for the user at the right time. *E.g.*, Ex-1005, ¶40 ("Determining the most suitable advertisement involves the process of calculating the priority of each advertisement under the current conditions."), ¶38, ¶31. This advances Wu's goal of exposing the user to

advertisement and improves the impression that the advertisement leaves the user.

Ex-1003, ¶91.

Second, Wu teaches advertisement selection based on multiple factors and basing the selection on a priority of the advertisement. Ex-1004, 7:63-8:12.

Doherty teaches using a priority-based mechanism to synthesize multiple factors (e.g., conditions, parameters). Ex-1005, ¶¶40-47. A priority-based mechanism provides an elegant way to synthesize multiple factors, which was commonly used in the art. Ex-1003, ¶92.

Third, Doherty's approach allows flexibility in balancing users' viewing experience and advertisers' interest. By adjusting the priority profiles of media content and advertising content, Doherty allows control over whether an advertisement is played right after a user input (prioritizing advertiser interest) or with a delay (prioritizing user experience). *See, e.g.*, Ex-1014, ¶8 (recognizing "conflict between the desire of consumers to skip commercial messages and the need of content distributors to offer effective and successful advertising channels"), ¶10; Ex-1003, ¶93.

The combination of Wu and Doherty involves applying a known technique (e.g., Doherty's priority-based content scheduling) to a known device (e.g., Wu's digital media player device) ready for improvement to yield predictable results. A POSITA would have had a reasonable expectation of success because determining

priority based on multiple factors and the ordering content based on priority involve basic mathematical operations that have been implemented using computer systems long before the 2002 timeframe. Playing an advertisement immediately after a user input or after a delay were both well known in the art. Ex-1014, ¶10, ¶27, ¶32; *supra* §III. Because Doherty's technique is applied to Wu in the manner taught by Doherty and to further Wu's goal of displaying an advertisement when the user tries to skip an original advertisement, the combination does not change the principle of operation of either reference. Ex-1003, ¶94.

The combination further teaches or suggests that adaptively modifying a presentation position of digital advertising content is performed by **one or more processors** executing software instructions ([1e], [17e]). *Supra* §§V.A.3[1b, d]/[17b, d]/[21d-e]/[22d-e]; *e.g.*, Ex-1004, 2:60-3:4, 4:39-53, 5:40-55, 6:12-49, 7:6-8:57, Figs. 2, 3, 4A; Ex-1005, ¶36; Ex-1003, ¶95.

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 play⁵ ([21f], [22f]). *See infra* §V.A.3[1f]/[17f]/[21g]/[22g]; Ex-1003, ¶96.

The combination therefore teaches limitations [1e], [17e], [21f], and [22f]. Ex-1003, ¶¶71-97.

[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,]

Doherty teaches **the one or more alternatively sequenced insertion points/alternate insertion position being adaptively selectable by the intersplicer according to selection criteria** (e.g., condition-based criteria) **defined by the one or more adaptive preference rules**⁶ (e.g., rules for determining the priority of items of information for each time slot) ([1f], [17f], [21g], [22g]). Ex-1003, ¶99, ¶102.

⁵ The combination of Wu and Doherty teaches that the alternate insertion position is determined “during play” because the advertising content is rescheduled dynamically based on user input controlling a course of presentation of the media content. Ex-1004, 2:24-35, 5:40-55, Fig. 2; Ex-1005, ¶25, ¶39, ¶57, Figs. 2, 10.

⁶ “Adaptive preference placement rule” in claims 21 and 22 is assumed to be synonymous with “adaptive preference rule.”

Doherty teaches the scheduler adaptively selecting, scheduling, and rescheduling advertisements and other items of information based on their associated priorities. Ex-1005, Abstract, ¶¶7-12, ¶25, ¶31, ¶¶35-38, ¶40, ¶48 (“An advertisement will be played if its priority level is the maximum of all advertisements in the database at that particular time, as shown and described with reference to FIG. 6.”), ¶52, Fig. 6; Ex-1003, ¶100.

The priority of each item of information is determined based on rules concerning multiple conditions corresponding to a certain available time slot. Ex-1005, ¶38 (“The conditions are then obtained or estimated in step 240 so that the most suitable advertisement or other item of information can be selected in step 250.”), ¶25. The rules for determining the priority of items of information are represented by functions of the conditions that are aggregated. Ex-1005, ¶¶40-47 (“[T]he priority profile could be a function of parameters at that particular time ...”), ¶53 (“[E]ach priority category could be weighted and then all of the weighted priority levels summed as shown in FIG. 7.”), Fig. 7; Ex-1003, ¶¶101-103.

Wu teaches selecting an advertisement to display using multiple factors and basing the selection on the priority of the advertisement. Ex-1004, 7:63-8:12. It would have been obvious to apply Doherty’s conditions with Wu since they are relevant to when it is suitable to present an advertisement. A POSITA would have found it obvious and been motivated to apply Doherty’s teachings to Wu, such that

Wu's advertisement is selected and scheduled to be inserted in the content stream by the scheduler using priority profiles that are determined based on multiple conditions or parameters. *Supra* §§V.A.3[1f]/[17f]/[21g]/[22g]; Ex-1003, ¶104.

The combination 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 position. Ex-1003, ¶105.

First, Wu teaches displaying sub-advertisements "once the user resumes watching the recorded television show in normal playback mode". Ex-1004, 2:24-35, 5:40-55, 8:36-45, Figs. 2, 3; *supra* §V.A.3[1e]/[17e]/[21f]/[22f]. By rescheduling advertising content to be at or after the new play position, Wu **takes into account the new play position** ([1f], [17f], [21g], [22g]). Ex-1003, ¶106.

Second, one obvious option under Wu's teachings was to display the sub-advertisement after normal playback has been resumed for a period of time. *Supra* §V.A.3[1e]/[17e]/[21f]/[22f]; Ex-1014, ¶27, ¶32. A straightforward way to implement this option was to use software to apply a fixed delay (defined as a period of time or a number of data blocks) between the new play position and the

insertion point of rescheduled advertising content. *Supra* §V.A.3[1d]/[17d]/[21d-e]/[22d-e]; Ex-1003, ¶107.

A POSITA would have been motivated to insert a fixed delay to give the user a sense of control over the timing of advertisement while protecting advertisers' interest in advertisement exposure. Furthermore, a POSITA would have understood that a rescheduled advertisement may require a "compile time." Ex-1005, ¶57, Fig. 10. Inserting a fixed delay would have provided time for compiling and prevented a pause in content playback, which provides further motivation for inserting the delay. Therefore, Wu suggests **taking 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** ([1f], [17f], [21g], [22g]). Ex-1003, ¶108.

Furthermore, Doherty's condition "time since [the advertisement] has last been played" (Ex-1005, ¶44) teaches **a length of time associated with playing the digital media content** ([1f], [17f], [21g], [22g]) because digital media content is played in between advertisements. *Supra* §§V.A.3[1d-e]/[17d-e]/[21d-f]/[22d-f]; Ex-1003, ¶109.

Doherty further teaches the condition "frequency that the advertisement is played." Ex-1005, ¶43. A POSITA would have known that the frequency may be defined in terms of time or the amount of content (e.g., number of data blocks)

between playback of the advertisement.⁷ Doherty's frequency condition **takes into account a length of time associated with playing the digital media content and a number of digital media data blocks to be played** ([1f], [17f], [21g], [22g]).

Ex-1003, ¶110.

Doherty also teaches that the priority levels of items of information can change over time. *Supra* §V.A.3[1e]/[17e]/[21f]/[22f]; Ex-1005, ¶¶49-50, Figs. 3A-3D. This teaches taking into account **a point in time the digital media content is to be played** ([17f], [21g], [22g]). Ex-1003, ¶111.

The combination therefore teaches limitations [1f], [17f], [21g], and [22g]. Ex-1003, ¶¶98-112.

[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];

The combination teaches or suggests these limitations in two different ways.

First, Doherty teaches dynamically creating new schedule based on estimated next available advertising time slot and using the new schedule after user

⁷ As was well known to a POSITA, digital media content in video or audio form were conventionally encoded and distributed in terms of data blocks. *See, e.g.*, Ex-1008, 1:34-41; Ex-1009, 5:54-65.

interactions ends if the estimate is correct. Ex-1005, ¶25 (“The process will then schedule items of information for the current estimated time.”), ¶39 (“The estimate of the next available advertising time slot ...”), ¶8, ¶57; *supra* §V.A.3[1f]/[17f]/[21g]/[22g]; Ex-1003, ¶114.

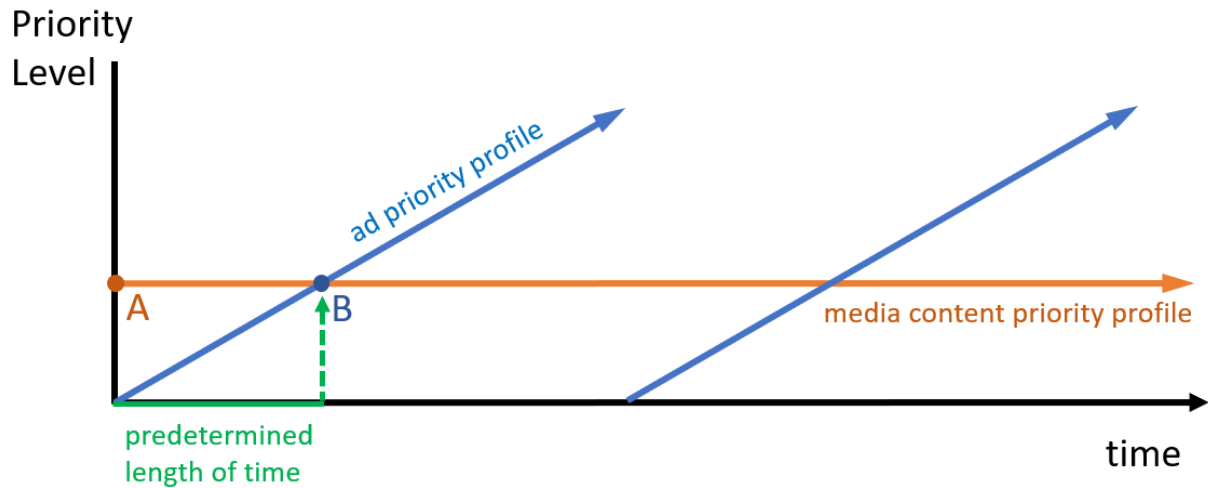
In applying Doherty’s teachings to Wu (*supra* §V.A.3[1e]/[17e]/[21f]/[22f]), a POSITA would have been motivated to adopt Doherty’s approach of performing rescheduling during user interactions, because this would have allowed compiling and rendering media and advertising content during user interaction and reducing delay in playback of the re-sequenced content stream to the user. Ex-1003, ¶115.

Because the new schedule is created before playback resumes, the length of time and the number of digital media data blocks separating the play position of an advertisement insertion point on the new schedule and the beginning of the new schedule (i.e., corresponding to the new play position) is predetermined. This teaches or suggests that **an alternatively sequenced insertion point/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 and the play position being a predetermined number of digital media data blocks after the new play position** ([1g], [17g], [21h], [22h]); Ex-1003, ¶116.

Second, Wu suggests inserting a fixed delay between the new play position and the insertion point of the rescheduled advertising content. *Supra* §V.A.3[1f]/[17f]/[21g]/[22g]. Here, the play position for advertising content is a **predetermined length of time after the new play position or a predetermined number of digital media data blocks after the new play position** ([1g], [17g], [21h], [22h]). Ex-1003, ¶117.

Furthermore, Doherty's condition "frequency that the advertisement is played" requires an advertisement to be played every time a certain length of time/number of data blocks of media content has been played. Ex-1005, ¶43; *supra* §V.A.3[1f]/[17f]/[21g]/[22g], §V.A.3[1d]/[17d]/[21d-e]/[22d-e], n.4. Based on this condition, a POSITA would have found it obvious and been motivated to schedule an advertisement at a play position that is the length of time / number of data blocks corresponding to the frequency after the new play position. Ex-1003, ¶118.

As explained above, one obvious way to apply Doherty's priority-based scheduling to Wu was to give Wu's digital media content a flat priority profile and an advertisement a ramp profile. *Supra* §V.A.3[1e]/[17e]/[21f]/[22f]. Here, it takes a predetermined amount of time (and a predetermined amount of data blocks) for the advertisement's priority level to exceed that of the digital media content:



Ex-1005, ¶¶48-51, Fig. 3A, Fig. 3D. To give the user a consistent ad-viewing experience, it would have been obvious to reset the ramp profile to zero at the new play position. Ex-1003, ¶119.

Doherty thus further teaches that the play position for advertising content is **a predetermined length of time after the new play position or a predetermined number of digital media data blocks after the new play position** ([1g], [17g], [21h], [22h]). Ex-1003, ¶120.

The combination teaches or suggests limitations [1g], [17g], [21h], [22h]. Ex-1003, ¶¶113-121.

[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];

Wu's digital media player device/system (e.g., electronic digital recording/play back device/system) has **a user interface (output)** shown on a display device. Ex-1004, 5:6-18, Figs. 1-2. Ex-1003, ¶122.

The user interface output **causes presentation of the content stream**, original and modified, **during a play period** ([1h], [17h], [21i], [22i]). *E.g.*, Ex-1004, 6:12-7:22, 5:40-55, Fig. 2, Fig. 3; Ex-1003, ¶123. 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 (e.g.,

rescheduled advertising content) is **required** ([21j], [22j]). *Infra*

§V.A.3[1i]/[17i]/[21k]/[22k]; Ex-1003, ¶124.

The combination further teaches that the **play period is associated with one or more states of play** ([1h], [17h], [21i], [22i]), including at least a state when media content is in progress, a state when initially scheduled advertising content (e.g., advertising content scheduled to be presented at an initially sequenced insertion point) is in progress, and a state when rescheduled advertising content (e.g., advertising content scheduled to be presented at an alternatively sequenced insertion point) is in progress. *Supra* §§V.A.3[1d-g]/[17d-g]/[21d-h]/[22d-h]; Ex-1003, ¶125.

The combination therefore teaches limitations [1h], [17h], [21i-j], and [22i-j]. Ex-1003, ¶¶122-126.

[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.

Wu teaches that rescheduled advertisements (e.g., sub-advertisements) constitute a required part of the digital advertising content since they are made non-skippable. Ex-1004, Abstract, 2:18-59 (“[T]he present invention includes a method for providing a non-skippable sub-advertisement to a display device.”), 5:40-55, 6:12-30, 8:20-57, Fig. 3. When a reschedule advertisement is presented, commands such as skip and fast forward are disabled. Ex-1004, 8:46-57 (“[I]t is understood that sub-advertisement 206 of the present embodiment cannot be turned off, fast forwarded through, or skipped over[.]”); Ex-1003, ¶128. It would have been obvious to implement Wu’s function by disabling the user interface input. Ex-1003, ¶129. Wu 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., rescheduled advertising content) is in progress ([1i], [17i]). In doing so, Wu 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 understood that Wu essentially describes a finite state machine: in a state when rescheduled advertising content is in progress, the output/action is to disable certain user commands. A POSITA would have understood how to implement a finite state machine and known that data representing states were conventionally stored as settings in memory and updated upon transitions between states. Ex-1003, ¶130. 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.

Wu confirms storage of state of play information in memory as it teaches that actions/processes of its device, including the functionality of presenting non-skippable advertising content, are carried out through operations on data stored in memory. Ex-1004, 2:46-59 (“[T]he system includes a computer readable memory

coupled to communicate with the processor for performing a method for providing a non-skippable sub-advertisement to a display device.”), 4:39-53 (“[C]ertain processes and steps ... are realized ... as a series of instructions (e.g., software program) that reside within computer readable memory units[.]”); 4:4-38 (“The data is represented as physical (electronic) quantities within the computer system’s registers and memories ...”), 6:12-30; Ex-1003, ¶¶131-132. When a value in a field or location in memory for the state of play is detected to indicate rescheduled advertising content is in progress, user commands such as skip and fast forward are disabled. *Supra* §V.A.3[1h]/[17h]/[21i]/[22i]; Ex-1004, 8:46-57; Ex-1003, ¶132.

Wu teaches or suggests **storing/keeping a setting** (e.g., setting in memory field/location allocated to state of play) **in a first memory of the digital media player device/system to indicate a first state of play** (e.g., a state when rescheduled advertising content is in progress), **the setting including a first value** (e.g., value stored in the memory field/location) **to indicate that a required part of the digital advertising content** (e.g., rescheduled 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, ¶133.

Alternatively, “setting” is satisfied by an entry in Wu’s time table. Ex-1004, 7:23-37 (“As such, the specific time intervals of the advertisements (e.g., 402 and 404) are stored within time table 400 ...”), Fig. 4A:

Time Table
400

Advertisement Time Intervals	
Ad 402	1200-1260 sec.
Ad 404	2340-2400 sec.
⋮	⋮
⋮	⋮
⋮	⋮

Fig. 4A

Ex-1003, ¶134.

Applying Doherty’s teaching of creating a modified schedule (*e.g.*, Ex-1005, ¶30, ¶39, ¶57, Fig. 10; §V.A.3[1e]/[17e]/[21f]/[22f]) to Wu, it would have been obvious to update the time table to reflect time intervals of rescheduled advertisements. Doing so would have been simply using a known technique (*e.g.*, updating a schedule) to improve a similar device (Wu’s electronic digital recording/play back device) in the same way. Each entry in the updated time table constitutes a setting that indicates a first state of play where rescheduled advertising content is presented. The time interval is a value that indicates this state of play when the current time falls within the time interval. Ex-1003, ¶135.

Wu teaches determining the state of play by detecting values in the time table. Ex-1004, 7:23-37/ A POSITA would have found it obvious to disable user control upon detecting a time interval in the time table that indicates rescheduled advertising content is starting or is in progress. Ex-1003, ¶136.

The combination thus teaches or suggests limitations [1i], [17i], [21k-l], [22k-l]. Ex-1003, ¶¶127-137.

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, ¶¶138-142.

Wu teaches a user interface input based on input devices such as a cursor control or cursor directing device and a display device. *Supra* §V.A.3[1c]/[17c]/[21c]/[22c]. Wu's **user interface input includes a graphical user interface** (claim 2) as media content is presented graphically. Ex-1004, 5:40-55, 8:36-45. 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 with a mouse-controlled cursor or a finger on touch screen to a desired point. *See, e.g.*, Ex-1023, ¶31, ¶45, Figs.1, 2, 4, 9; Ex-1004, 5:19-39. 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, ¶¶139-140.

The combination teaches a user input bypassing an original advertisement. *Supra* §V.A.3[1e]; Ex-1004, 2:24-35, 5:40-55, Fig 2. 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, ¶141.

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, ¶142.

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, ¶¶143-145.

Wu teaches streaming digital media content and digital advertising content that are stored as MPEG files. Ex-1004, 6:31-49. A POSITA would have been familiar with the MPEG standard and understood that MPEG files were flexible in size. Ex-1024, 000276, 000280. An MPEG file may include a movie, a TV show episode, an advertisement, or segments thereof. *See, e.g.*, Ex-1025, 3:1-18, 16:6-10; Ex-1003, ¶144.

Wu therefore teaches that **the digital media content comprises at least one media file** (e.g., a MPEG file for at least part of a TV show episode) and that **the digital advertising content comprises at least one advertisement file** (e.g., a MPEG file for an advertisement). *E.g.*, Ex-1004, 6:31-49, 7:23-37, Fig. 4B; Ex-1003, ¶145.

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, ¶¶146-147.

Wu teaches presenting an advertisement (e.g., ad 402) between two portions of the media content. *E.g.*, Ex-1004, 6:31-58, 7:23-37, Fig. 4B:

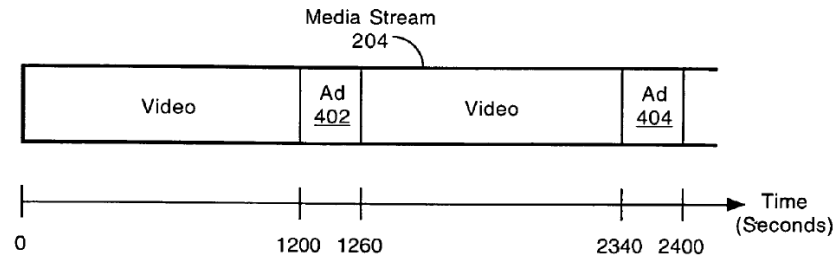


Fig. 4B

Storing one piece of media content as one media file and dividing such a media file was well known in the art. *Supra* §V.A.5; Ex-1025, 3:1-18, 16:6-10. A POSITA would have found it obvious to provide an advertisement in the middle of the movie or TV show episode by inserting it in between two segments of the media file. *E.g.*, Ex-1004, 6:31-49, 7:23-37, Fig. 4B. To create the media stream 204, Wu would have **sub-divided the media file** (e.g., a movie, a TV show episode) **into two or more segments** (e.g., segments corresponding to 0-1200 seconds and 1260-2340 seconds, respectively). As shown in Figure 4B, **a sequence** (e.g., media stream 204) **is generated**, where **at least a part of the at least one of the advertising file** (e.g., ad 402) **is presented between the two segments**. *Id.* Ex-1003, ¶147.

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, ¶¶148-151.

As explained above, multiple media files can be used to represent different parts of a piece of media content. Ex-1004, 6:31-49; *supra* §V.A.5. Doherty's items of information are media files such as MPEG files. *E.g.*, Ex-1005, ¶25, ¶¶27-28. When Doherty's teachings of dynamically rescheduling items of information are applied to Wu, media files storing portions of Wu's media content and advertisement files storing advertisements are rescheduled in response to the user input. *Supra* §V.A.3[1e]. The combination therefore teaches that **the user input** (e.g., skipping over or fast forwarding through media stream) **results in a change of sequence of two or more media files**. *Supra* §V.A.3[1e]; *e.g.*, Ex-1005, ¶30, ¶39, ¶¶56-57, Fig. 10; Ex-1003, ¶149.

Doherty's modified schedule includes advertisement files and media files to be presented after user interactions. *E.g.*, Ex-1005, Abstract, ¶30, ¶57, Fig. 10:

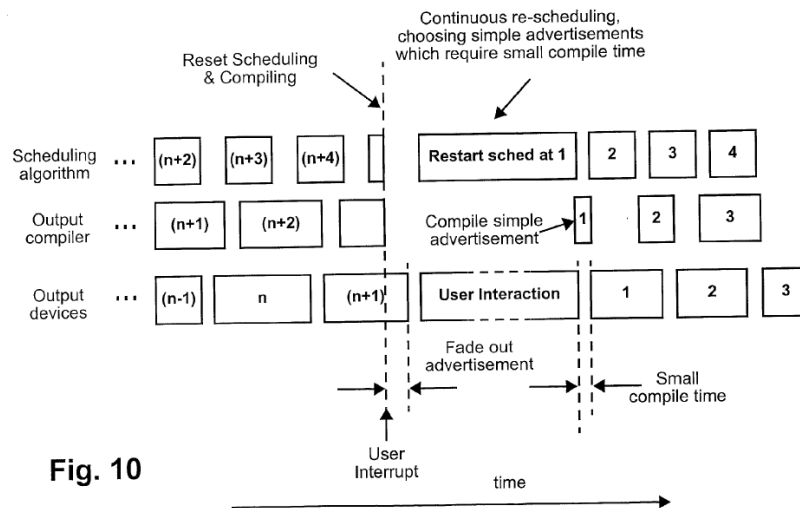


Fig. 10

Media files that will no longer be played, such as media file(s) storing portions of the media content skipped over or fast forwarded through by the user, are not included in the modified schedule. This teaches **subtracting an existing media file**. Ex-1003, ¶150.

Doherty teaches that the size of the schedule is limited. Ex-1005, ¶37 (“Limiting the size of the schedule ...”). The modified schedule would include media content that was not in the original schedule, which occupies space of original media content that is no longer relevant given the new play position. This teaches **re-arranging the sequence of two or more media files in a change of sequence by adding a new media file**. Ex-1003, ¶151.

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, Wu 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-1004, 1:42-63, 2:24-35, 5:19-55, 7:6-22.

The combination therefore teaches claims 8 and 9. Ex-1003, ¶152.

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, ¶¶153-160.

Wu teaches retrieving advertisements from local storage for display and updating the advertisements in local storage from time to time. *E.g.*, Ex-1004, 7:63-8:12 (“[S]ub-advertisement 206 may be stored by a memory device of

electronic digital recording/play back system 100 ... or by some other remote memory device[.] ... sub-advertisement 206 ... may be updated from time to time by a remote source[.]”). Wu thus contemplates software component(s) that **rotate new advertising content** (e.g., sub-advertisement) **into the content stream in response to the user input** (*supra* §V.A.3[1e]), **receive ad files and select ad files for presentation from a database of ad files and replace ad files with new ad files after the ad files have been presented**. Wu teaches or suggests **an ad manager and an ad rotator**. Ex-1003, ¶154.

To the extent Wu does not single out particular software component(s) with functionalities corresponding to an “ad manager” or an “ad rotator,” Doherty teaches these limitations. Doherty teaches an output compiler that receives “a reference to an advertisement” from the scheduler and, in response, selects advertisements matching the references for presentation and receives advertisements from a local storage device. Ex-1005, Fig.1, ¶¶27-28. This teaches **receiving ad files and selecting ad files for presentation from a database of ad files**. Ex-1003, ¶155.

In response to user input, the output compiler retrieves and compiles advertisements based on the updated schedule. Ex-1005, ¶28, ¶55, ¶57, Fig. 10. This **rotates new advertising content into the content stream in response to the user input**. Ex-1003, ¶156.

Doherty's output compiler provides compiled advertisements to output devices for display. Ex-1005, ¶28 ("The output compiler 110 can also be adapted to output the advertisements and other items of information in a suitable format for multi-displays."), ¶55, Fig. 8:

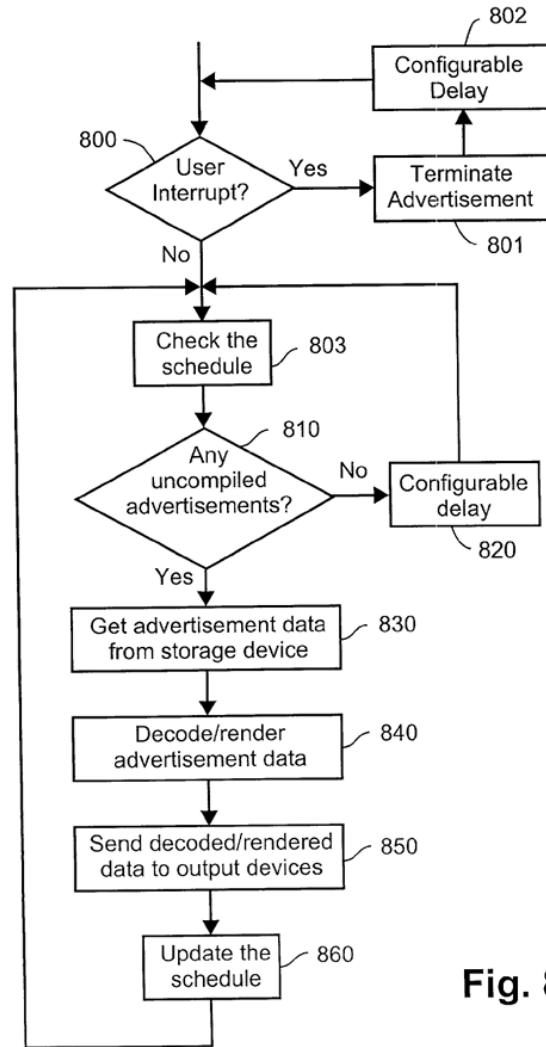


Fig. 8

Ex-1003, ¶157.

As the output devices finish displaying advertisements, the output compiler provides new advertisements to the output devices. Ex-1005, ¶57 ("While the

scheduling process 140 schedules advertisement (n+2), the output compiler 110 compiles advertisement (n+1) and the output devices 100 play advertisement (n-1) followed by advertisement n.”), Fig. 10:

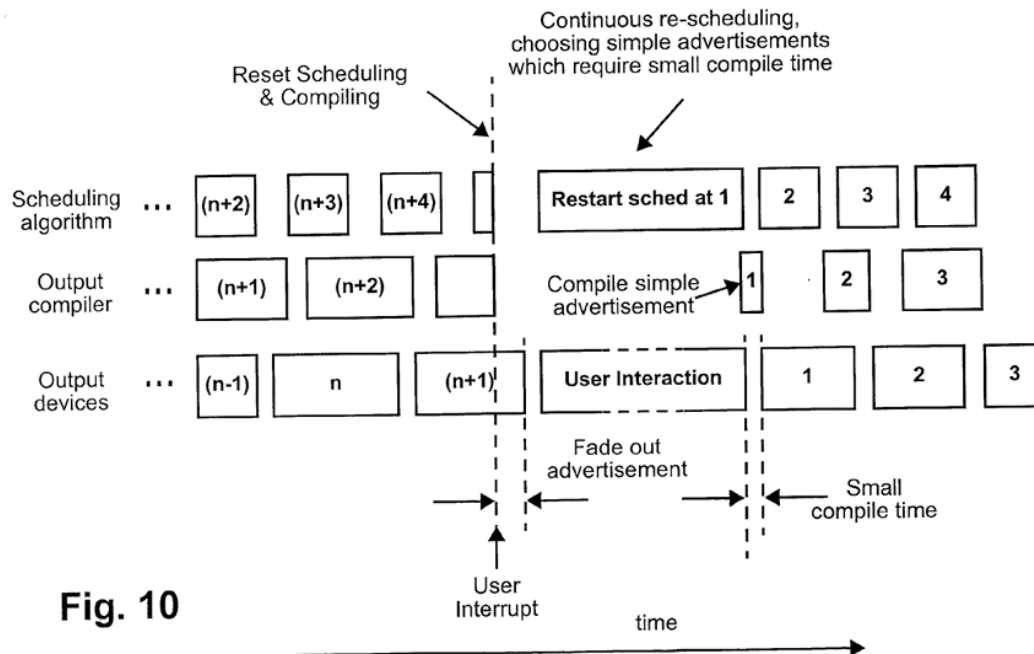


Fig. 10

Doherty’s output devices, which can be “a conventional display unit” (Ex-1005, ¶27), include limited storage space, where content that has been displayed are removed to make space for new content. By providing new advertisements to the output devices, the output compiler **replaces ad files** (e.g., advertisement (n-1)) **with new ad files** (e.g., advertisement (n+1)) **after the ad files have been presented**. Ex-1003, ¶158.

Because Doherty’s output compiler includes software that performs the recited functionalities of the ad manager and the ad rotator, Doherty teaches **an ad manager and an ad rotator**. Ex-1003, ¶159.

A POSITA would have found it obvious to apply Doherty's teachings regarding its output compiler with Wu's digital media player device to implement the functionality of selecting, receiving, rotating, and replacing advertising content. Doing so would have been nothing more than applying a known technique (e.g., functionalities of Doherty's output compiler) to a known device (e.g., Wu's electronic digital recording/play back device) to yield predictable results. Ex-1003, ¶160.

10. Dependent Claim 11

<p>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.</p>

Doherty's rules for determining the priority of items of information teach adaptive preference rules. *Supra* §§V.A.3[1e-f]. Doherty teaches aggregating different rules. Ex-1005, ¶53, Fig. 7:

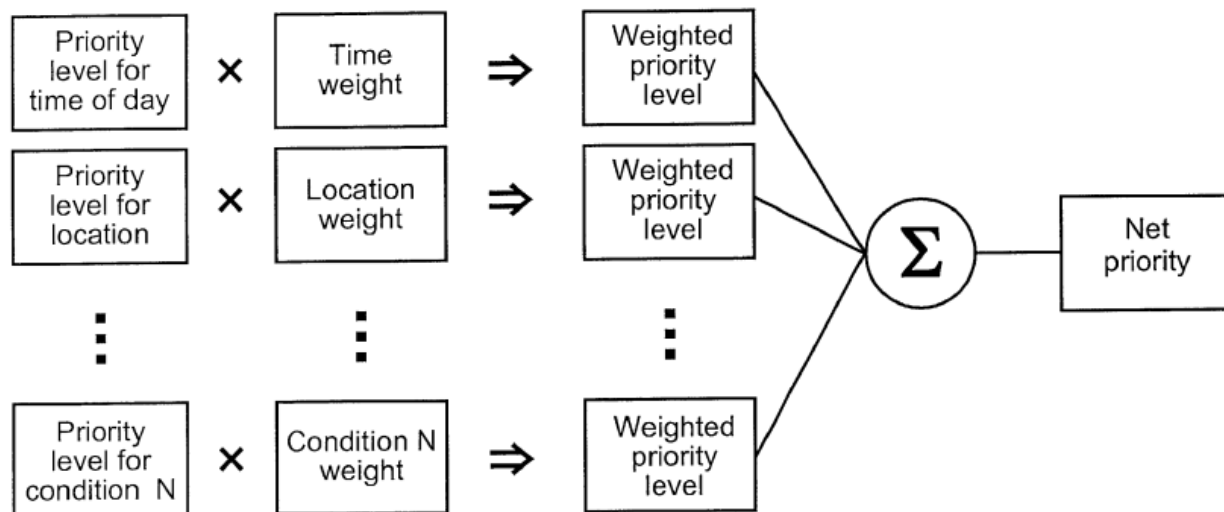


Fig. 7

See also Ex-1005, ¶25, ¶38, ¶¶40-47. The combination thus teaches claim 11. Ex-1003, ¶161.

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, ¶¶162-167.

Wu teaches providing copyrighted content to a user for recording and playing back. *E.g.*, Ex-1004, 5:40-6:11; *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 Wu'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, ¶163.

Wu and Doherty teach encoding and decoding media content according to standards such as MPEG. Ex-1004, 7:44-62, 6:31-49; Ex-1005, ¶55. Encryption and decryption were conventionally carried out in conjunction with encoding and decoding. Ex-1017, ¶37; Ex-1018, ¶66, ¶70, ¶94; Ex-1024, 000069, 000011, 000029-31; Ex-1003, ¶164. 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, ¶165.

Furthermore, a POSITA would have found it obvious to use Wu's non-volatile memory for storing digital media content. Ex-1004, 4:54-5:5, 7:63-8:12, Fig. 1. A POSITA would have found it obvious to limit access to the memory to prevent unauthorized copying or redistribution because such software functions were well-known in the art. *See, e.g.*, Ex-1026, ¶5; Ex-1018. Software functions that limit access to memory was well-known in the art. *E.g.*, Ex-1026, ¶38; Ex-1018, ¶71, ¶79; Ex-1003, ¶166. 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, ¶167.

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, ¶¶168-173.

Wu teaches recording an incrementing time reference indicating time ranges for media content and advertisements. Ex-1004, 6:31-49, 7:23-37, Fig. 4A:

Time Table
400

Advertisement Time Intervals	
Ad 402	1200-1260 sec.
Ad 404	2340-2400 sec.
.	.
.	.
.	.

Fig. 4A

Fig. 4B:

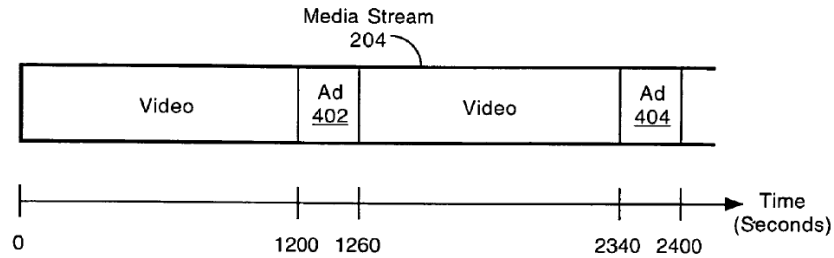


Fig. 4B

Ex-1003, ¶170.

The incrementing time reference is recorded based on data in the media stream, such as “flags.” Ex-1004, 6:31-49, 7:38-43. Wu’s device **reads the data structure** of the media stream to obtain and record the data in the incrementing time reference. This is **the data structure of the one or more data blocks of the digital media content** because the digital media content is transmitted using this data structure. *Supra* §V.A.3[1b], [1d]; Ex-1004, 5:56-6:11, 6:31-49; Ex-1003, ¶169, ¶171.

The structure of the incrementing time reference shows that the media stream includes **data identifying a media file associated with the digital media content** (e.g., data identifying a file associated with video between 0 and 1200 seconds), **data indicative of an ad requirement associated with the digital media content** (e.g., data indicating a time interval when a user is required to view an advertisement), and **data representing an ad file associated with the digital advertising content to be displayed with the media file** (e.g., data representing a

file associated with the advertisement between 1200 and 1260 seconds). *E.g.*, Ex-1004, 2:36-45, 5:40-55, 8:36-45; *supra* §V.A.3[1e]; Ex-1003, ¶172.

It would have been obvious that the data structure includes **first, second, and third fields** containing the aforementioned data, respectively. *E.g.*, Ex-1027, ¶20, ¶23, ¶35, ¶¶39-40; Ex-1004, 7:23-37; Ex-1005, ¶¶28-29; Ex-1003, ¶173.

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.

Wu teaches storing data related to advertisements locally or remotely. *E.g.*, Ex-1004, 4:39-5:5, 7:63-8:12. 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, ¶174.

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, ¶¶175-178.

The combination teaches **presentation data comprising an indication of the digital advertising content that has been presented**. First, Wu teaches a time table with time intervals for advertisements and allows detecting when an

advertisement is being fast forwarded through or skipped over. Ex-1004, 7:23-43, Figs. 4A-4B; *supra* §V.A.3[22e]. The time table, along with knowledge about the current time, indicates digital advertisement content that has been presented. Ex-1003, ¶176.

Second, Doherty's priority profile (e.g., ramp profile) and parameters (e.g., frequency, time since last play, number of time played) involve recording data indicating digital advertisement content that has been presented. Ex-1005, ¶40, ¶¶43-45, ¶50, Fig. 3D. Applying Doherty's teachings includes recording presentation data indicating digital advertising content that has been presented. Ex-1003, ¶177.

To the extent Patent Owner argues that the second memory is required to be different from the first memory, Wu teaches having multiple memories for its system. Ex-1004, 4:39-5:5, Fig. 1. A POSITA would have found it obvious to **store the presentation data in a second memory of the digital media player system.** Ex-1003, ¶178.

B. Ground 2: Claims 2 and 15 Are Rendered Obvious by Wu, Doherty, 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, ¶180.

Crow “relates to user interfaces for processing ... media information[.]” Ex-1006, 1:12-20; Ex-1003, ¶181. 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, ¶182.

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, ¶183.

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:

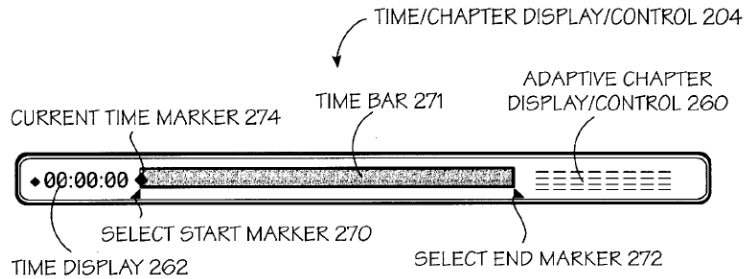


Fig. 8A

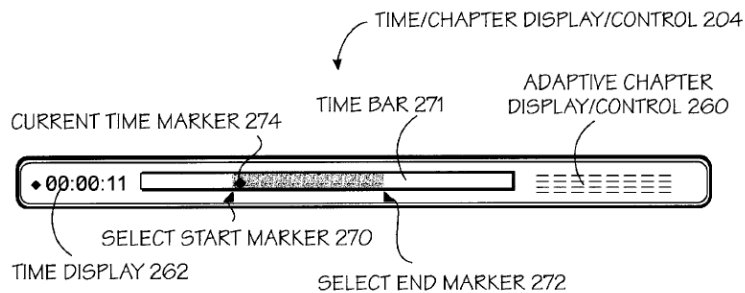


Fig. 8B

Ex-1003, ¶184.

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.”), 18:23-43, 18:44-19:20, 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, ¶185.

A POSITA would have been motivated to apply Crow’s time bar teachings with Wu 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, ¶186.

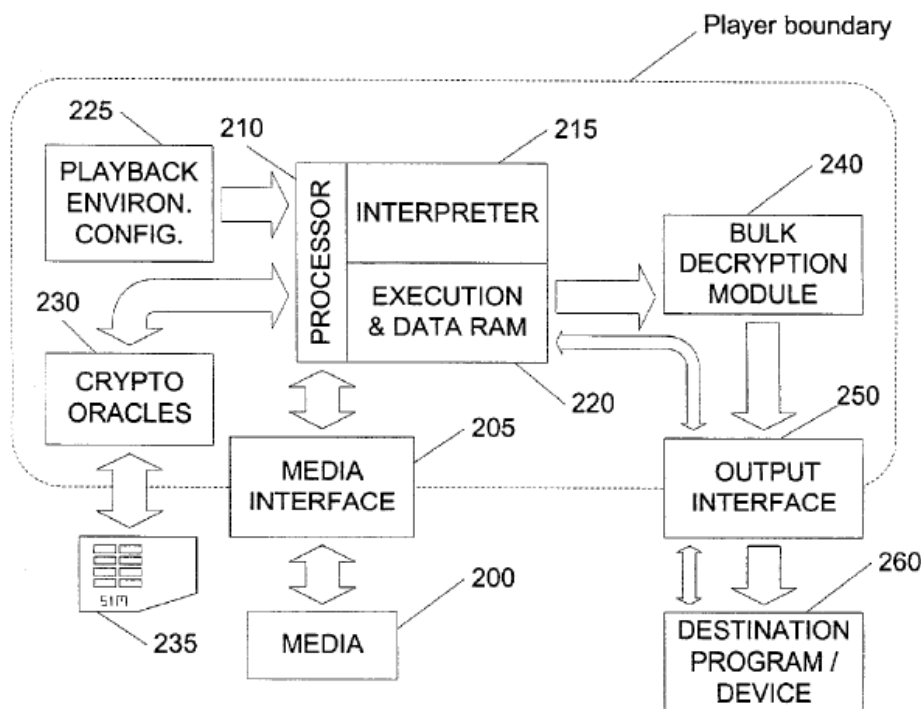
C. Ground 3: Claim 13 Is Rendered Obvious by Wu, Doherty, and Kocher

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, ¶188.

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, ¶189.

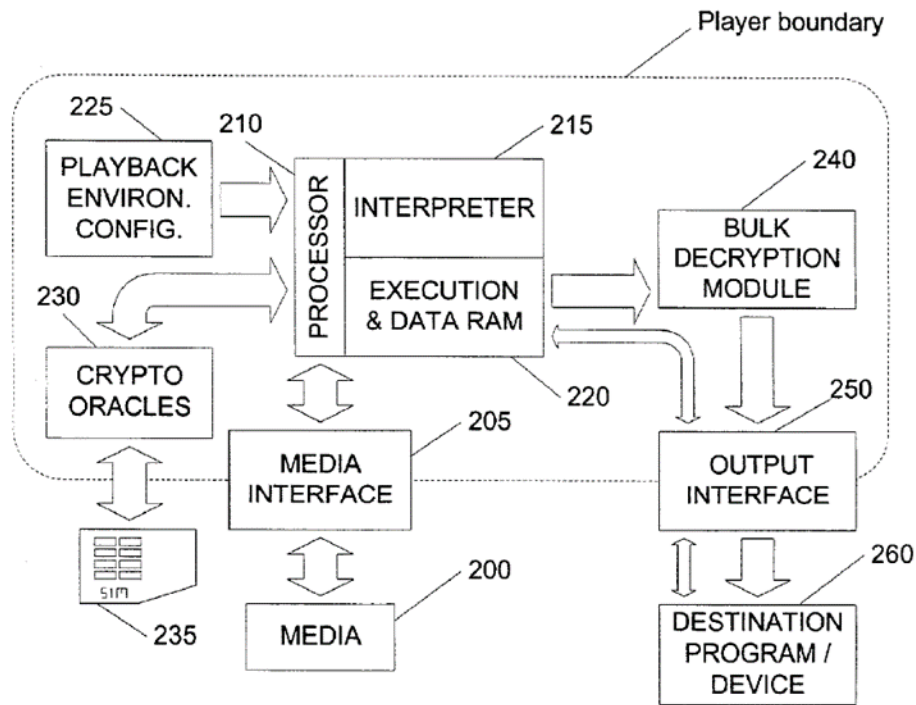
Kocher’s media player includes a bulk decryption module that retrieves encrypted content and decrypts it. *E.g.*, Ex-1007, ¶2, ¶50, ¶¶112-113; Ex-1003, ¶190. Kocher’s “player[] can provide content with secure, nonvolatile storage for maintaining state between playings.” Ex-1007, ¶¶92-93; Ex-1003, ¶191.

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, ¶192.

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, ¶193.

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, ¶194.

Second, Kocher teaches using secure, nonvolatile storage for storing state information between 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, ¶195. 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, ¶196.

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 **limit access to a non-volatile memory following the decryption of the digital media content**. Ex-1003, ¶197. A POSITA would have found it obvious to implement Kocher’s memory access control functions 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, ¶198.

A POSITA would have found it obvious and been motivated to apply Kocher’s teachings regarding decryption and memory access management to Wu’s electronic digital recording/playback device to protect Wu’s copyrighted content.

Supra §V.A.11; Ex-1003, ¶199. Furthermore, both Wu and Doherty teach tracking and managing users' viewing activities. *E.g.*, Ex-1004, 7:6-37, Figs. 4A-4B; Ex-1005, ¶¶31-32, ¶38, ¶56. 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 Wu teaches storing data in non-volatile memory, Kocher's teachings are readily applicable. Ex-1004, 4:54-5:5, 7:44-8:12; Ex-1003, ¶200. Applying Kocher's teachings to Wu would have been simply applying a known technique (e.g., Kocher's decryption and memory access management functionalities) to a known device (e.g., Wu's electronic digital recording/paly back device) to yield predictable results. Ex-1003, ¶201.

The combination renders obvious claim 13. Ex-1003, ¶¶193-202.

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 Wu, Doherty, 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, ¶35, ¶179, ¶187.

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
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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 1001-1027 were served in entirety on the Patent Owner at the following addresses of record as listed on Patent Center, via Priority Mail Express®:

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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 1001-1027 were also sent via electronic mail to the attorneys of record for Plaintiff in the related litigation matter(s):

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**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 13,337 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,

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