IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

COMCAST CABLE COMMUNICATIONS, LLC,
Petitioner

v.

ROVI GUIDES, INC.
Patent Owner

Patent No. 7,873,978
Filing Date: June 11, 2010
Issue Date: January 18, 2011
Title: CLIENT-SERVER BASED INTERACTIVE TELEVISION

PROGRAM GUIDE SYSTEM WITH REMOTE SERVER RECORDING

Inter Partes Review No.: 2019-01418

PETITION 1 of 3 FOR *INTER PARTES* REVIEW UNDER 35 U.S.C. §§ 311-319 AND 37 C.F.R. § 42.100 *et seq.*

TABLE OF CONTENTS

Page

MANDATORY NOTICES vi

I. INTRODUCTION AND RELIEF REQUESTED 1

II. OVERVIEW 2
- A. Technical Background 3
- B. Brief Description of Alleged Invention 3
- C. Relevant Prosecution History 7
- D. Earliest Priority Date for the Claims 10
- E. The Scope and Content of the Prior Art 10
  1. Lawler '763 12
  2. Yamada 17
  3. Ang 21
  4. Mankovitz 22

III. IDENTIFICATION OF CHALLENGE PURSUANT TO 37 C.F.R. § 42.104(b) AND STATEMENT OF THE RELIEF REQUESTED 22
- A. Level of Ordinary Skill 26
- B. Claim Construction 26
  1. "record request" 26
  2. "retrieval request" 27
  3. "to record … on-demand" 27
  4. "present[ing] to the user the program guide data … as if the [retrieved/associated] program were being originally aired" 27
- C. Claim Constructions from Co-Pending Litigation 28

IV. SPECIFIC GROUNDS FOR UNPATENTABILITY 31
- A. Ground A: Obviousness of Claims 1 and 5 in View of Lawler and Yamada 31
  1. Independent Claim 1 31
     - i. [1A]: A method for use in an interactive television program guide system in which television programs are recorded and played back on-demand by a remote media server for a number of users, the method comprising: 31
     - ii. [1B]: generating a record request in response to a user indicating a desire to record a program on-demand with the remote media server, ... 33
     - iii. [1C]: wherein the record request is generated by an interactive television program guide; 34

iv. [1D]: recording the program with the remote media server in response to the record request;....36
v. [1E]-[1H]....36
a. [1E]: generating a retrieval request in response to a user request, ...37
b. [1F]: wherein the retrieval request is generated by the interactive television program guide; 44
c. [1G]: retrieving the program with the remote media server in response to the retrieval request; and....47
d. [1H]: storing the retrieved program on user television equipment for later play back. 49
2. Independent Claim 5 51
B. Ground B: Obviousness of Claims 2-3 and 6-7 in View of Lawler, Yamada, and Ang 56
1. Claims 2 and 6 56
2. Claims 3 and 7 60
C. Ground C: Obviousness of Claims 4 and 8 in View of Lawler, Yamada, and Mankovitz....64
V. CONCLUSION....69
CERTIFICATION UNDER 37 CFR § 42.24(d) 70
CERTIFICATE OF SERVICE 71
CLAIM LISTING APPENDIX 72

EXHIBITS[1]

Ex. 1001:	U.S. Patent No. 7,873,978 to Ellis, *et al*. ("the '978 patent")
Ex. 1002:	U.S. Patent No. 5,805,763 ("Lawler")
Ex. 1003:	Japanese Patent App. No. JPH8-123820 ("Yamada")
Ex. 1004:	U.S. Patent No. 6,611,654 ("Shteyn")
Ex. 1005:	U.S. Patent No. 6,163,316 ("Killian")
Ex. 1006:	Ee-Luang Ang, Syin Chan and Bu-Sung Lee, *Deployment of VCR services on a computer network*, Journal of Network and Computer Applications, Vol. 21, No. 1, January 1998 ("Ang")
Ex. 1007:	Japanese Patent App. No. JPH9-149354 ("Matsumoto")
Ex. 1008:	U.S. Patent No. 5,541,738 ("Mankovitz")
Ex. 1009:	Prosecution History for U.S. Patent Appl. No. 12/814,030
Ex. 1010:	U.S. Provisional Appl. No. 60/092,807 ("the '807 Provisional")
Ex. 1011:	Declaration of Dr. Vernon Thomas Rhyne, III
Ex. 1012:	Prosecution History for U.S. Patent Appl. No. 11/788,259
Ex. 1013:	U.S. Patent No. 5,956,716 ("Kenner")
Ex. 1014:	U.S. Patent No. 6,754,696 ("Kamath")

[1] Citations to page numbers in these exhibits refer to the pagination in the original document with the exception of Exhibits 1006, 1009, 1010, 1012, and 1017, in which the citations refer to the added paginations.

Ex. 1015:	Japanese Patent App. No. JPH9-245467 ("Shimazaki")
Ex. 1016:	U.S. Patent No. 5,530,754 ("Garfinkle")
Ex. 1017:	Excerpts from Prosecution History for U.S. Patent App. No. 09/332,244
Ex. 1018:	Declaration of Carrie Gardner, Ph.D.
Ex. 1019:	Reserved
Ex. 1020	Declaration of Dr. Michael Shamos in Support of Rovi Guides, Inc.; Rovi Technologies Corp.; and Veveo, Inc.'s Claim Construction Brief, Rovi Guides, Inc. v. Comcast Corp., No. 1:16-cv-09278 (JPO), Document 283-7, (S.D.N.Y. May 5, 2017)
Ex. 1021	Claim Construction Opinion and Order, Rovi Guides, Inc. v. Comcast Corp., No. 1:16-cv-09278 (JPO), Document 313, (S.D.N.Y. Aug. 10, 2017)
Ex. 1022	Comcast's Proposed Claim Constructions, Rovi Guides, Inc. v. Comcast Corp., No. 2:19-cv-0275-AG (FFMx), (CDCA, July 1, 2019)
Ex. 1023	Plaintiff Rovi Guides, Inc.'s Preliminary Claim Constructions under Standing Patent Rule 3.2, Rovi Guides, Inc. v. Comcast Corp., No. 2:19-cv-0275-AG (FFMx), (CDCA, July 1, 2019)
Ex. 1024	Reserved
Ex. 1025	Reserved

MANDATORY NOTICES

Real Parties in Interest & Related Matters

The real parties-in-interest for this petition are (i) Comcast Corporation, (ii) Comcast Business Communications, LLC, (iii) Comcast Cable Communications Management, LLC, (iv) Comcast Cable Communications, LLC, (v) Comcast Holdings Corporation, (vi) NBCUniversal Shared Services, LLC (formerly known as Comcast Shared Services, LLC) (vii) Comcast of Lompoc, LLC, (viii) Comcast of Santa Maria, LLC, (ix) Comcast Financial Agency Corporation, and (x) Comcast STB Software I, LLC. These entities are referenced below as "Comcast entity _" or as "Comcast entities __," where "__" is one of or more of (i)-(x). No unnamed entity is funding, controlling, or directing this Petition for *inter partes* review (IPR) of U.S. Patent No. 7,873,978, or otherwise has an opportunity to control or direct this Petition or Petitioner's participation in any resulting IPR.

The '978 patent has been asserted against Comcast entities (i)-(viii) in *Rovi Guides, Inc. v. Comcast Corporation*, No. 2:19-cv-00275 (C.D. Cal.). The earliest date of service on any of the Comcast entities named in the district court complaint was January 16, 2019.

The '978 patent is the subject of two other requests for *inter partes* review filed by Petitioner. Of the references relied upon herein, only Lawler was cited in

the ’978 patent. No arguments presented in this Petition were raised during prosecution of the ’978 patent.

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I. INTRODUCTION AND RELIEF REQUESTED

Comcast Cable Communications, LLC ("Petitioner") petitions for *inter partes* review of claims 1-8 of U.S. Patent No. 7,873,978 to Ellis (the "'978 patent") (Ex. 1001).

The '978 patent's claimed interactive program guide system, which records programs with a remote server and then retrieves and stores the programs for later playback, was not new as of the effective filing date. As this Petition and the accompanying two Petitions show, the prior art is replete with exactly this sort of interactive guide system for on-demand recording and retrieval of video programs.

For example, Lawler discloses an interactive program guide system comprising a remote server that stores program guide data and records programs. Programs that have been recorded may be retrieved and viewed by a user at a local client device. Lawler discloses an embodiment with all the limitations of the '978 patent's independent claims, except for the requirement of storing the retrieved program on user television equipment for later playback. Yamada expressly discloses the requirement of storing the retrieved program on user television equipment. To the extent Patent Owner contends that Lawler fails to teach a retrieval request generated by the interactive program guide and retrieving the program with the remote server in response to the retrieval request, Yamada discloses these limitations also.

Yamada, like Lawler, discloses a system comprising a remote media server that communicates with local client devices. Yamada discloses an interactive program guide system configured to retrieve programs from a remote server and locally store the programs for later playback. Lawler in view of Yamada renders obvious at least claims 1-3 and 5-7 of the '978 patent. Incorporating Yamada's teachings into Lawler's system would have been obvious and a skilled person would have been motivated to do so and would have expected it to yield the alleged invention claimed in the '978 patent.

With respect to dependent claims 2-3 and 6-7, Lawler-Yamada-Ang teaches and provides motivation to retrieve programs as a data file or a digital data stream. With regard to dependent claims 4 and 8, Lawler-Yamada-Mankovitz teaches and provides motivation to store program guide data associated with recorded programs and, during later playback, present such information to the user as if the program were being originally aired.

As demonstrated by a preponderance of the evidence, including this robust prior art and the Declaration of Dr. Vernon Rhyne, III (Ex. 1011), the '978 patent's claimed system and method of using an interactive television program guide to record and play back video programs on-demand with a remote server would have been obvious.

II. OVERVIEW

A. Technical Background

The '978 patent relates to "interactive television program guide systems that allow users to record programs and program guide data on a media server." Ex. 1001 at 1:16-19. When the priority application was filed in June 1999, however, solutions for recording programs on a media server using an interactive program guide ("IPG") were well-known.

For example, generating a record request using an IPG was well-known. *See, e.g.,* Ex. 1001, 1:38-42, 1:56-61, 20; 20:27-32, 28:51-54; Ex. 1002, Abstract, 1:8-14, 1:46-49, 2:6-10; Ex. 1004 at 1:34-50, 3:56-4:1; Ex. 1005, Abstract, 3:28-33, 6:1-5, 8:8-11. Recording programs with a remote server was also well known. Ex. 1002 at 12:29-30, 12:58-61, 13:27-32; Ex. 1004 at 1:46-51, 3:66-4:1; Ex. 1006 at 41, 43, 45, 46, 48, 49. Furthermore, retrieving a program in response to a retrieval request was well-known. Ex. 1004 at 3:24-36, 4:66-67; Ex. 1007, ¶ [0013]; Ex. 1015, Abstract, ¶¶ [0027], [0029]-[0030]. Lastly, storing a retrieved program on user television equipment for later playback was also well known. Ex. 1003, ¶ [0040], [0043]-[0045]; Ex. 1007, ¶ [0013]; Ex. 1015, ¶¶ [0029]-[0030]; Ex. 1016 at 3:11-14.

B. Brief Description of Alleged Invention

All independent claims require an "interactive television program guide" configured to generate record and retrieval requests, as well as a "remote media

server" that is used to record and retrieve programs on-demand. Ex. 1001, claims 1, 5.

The interactive television program guide system includes a main facility 12 that "provides program guide data from program guide data source 14 to interactive program guide television ["IPGT"] equipment 17." *Id.* at 5:45-49, Fig. 1. This data may include "television programming data (e.g., program identifiers, times, channels, titles, and descriptions) and other data for services other than television program listings." *Id.* at 5:63-6:3.

IPGT equipment 17, as shown below in Figure 2d, includes distribution equipment 21, which "provid[es] program guide data to user television equipment 22 over communications path 20" and distributes analog/digital video signals. *Id.* at 6:45-61.

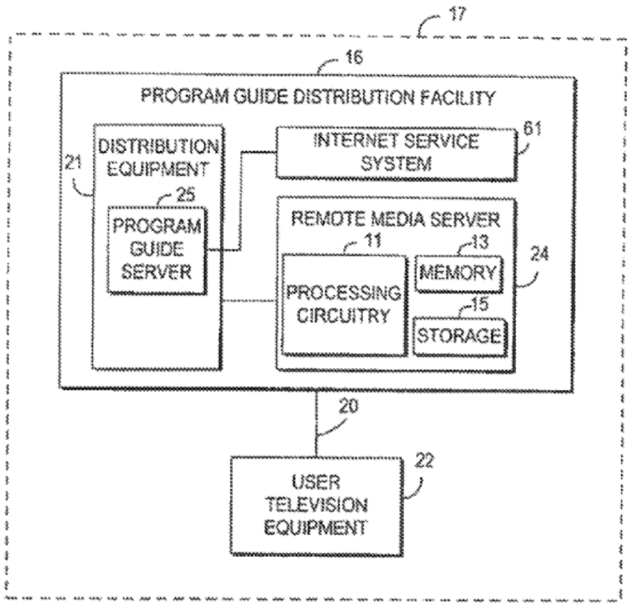


FIG. 2d

Ex. 1001, Fig. 2d

IPGT equipment 17 also includes remote media server 24, which "records programs, program guide data…and supplies either or both to user television equipment 22 in response to requests generated by the program guide" or a web application. *Id.* at 8:54-58; *see also id*., 8:40-48, 9:6-8, 13:8-12. The '978 patent describes that record requests may be generated when users indicate a desire to record a program. *Id.* at 22:1-6. Remote media server 24 records programs and program guide data on storage 15 in response to record requests generated by the interactive program guide. *Id.* at 10:42-46; *see also id.,* 6:28-55, 11:39-46, 20:17-25, 22:15-19, Figs. 5, 14b. Additionally, "[r]emote media server 24 retrieves programs from storage 15 in response to retrieval requests generated by the program

guides ...." *Id.* at 11:65-12:1; *see also id.,* 12:5-25, 12:48-51, 24:33-34. The retrieval request specifies which program the user wishes to retrieve and need not involve immediate playback of the program. *Id.* at 24:34-45.

Program guide data and stored programs may be distributed by distribution equipment 21 to user television equipment 22 as digital data streams/files "for viewing in real-time" or "stored by user television equipment 22 for playback." *Id.* at 13:12-36, 24:45-48. The '978 patent describes that, as shown in Figure 7, the user television equipment 22 includes set-top box 28 for tuning to a desired television channel, running the program guide client, and controlling a storage device (*e.g.*, storage device 31, 32) to record programs and program guide data. *Id.* at 13:36-14:34.

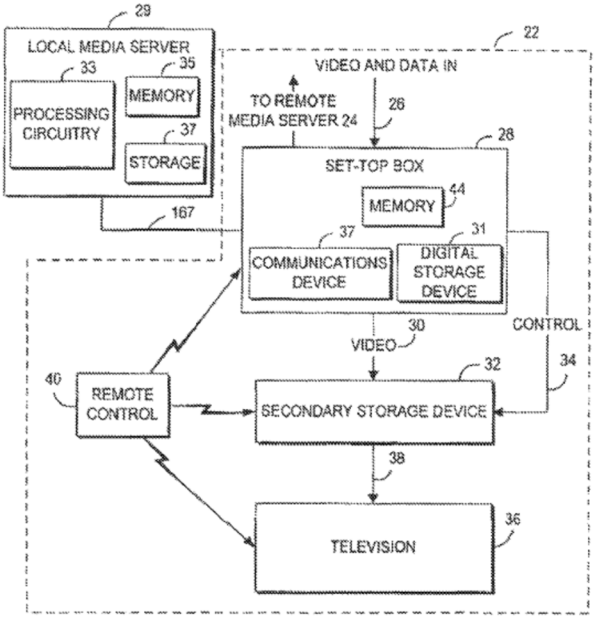


FIG. 7

Ex. 1001 at Fig. 7

When users initiate playback of a stored program/video, television 36 receives video signals generated by storage device 31 or the secondary storage device 32. Ex. 1001 at 14:45-64, 24:48-51. An input device, such as remote control 40, "may be used to control set-top box 28, secondary storage device 32, and television 36.…" *Id.* at 14:3-5; *see also id*., 15:66-16:13, 17:3-13, 20:32-35, 20:41-46, Fig. 8; *see also* Ex. 1011, ¶¶ 40-66.

C. Relevant Prosecution History

The '978 patent was filed as App. No. 12/814,030 ("'030 Application") on June 11, 2010, and is third in an application chain claiming priority to a provisional application (Ex. 1010), App. No. 60/092,807 ("'807 Provisional"), filed July 14, 1998. The '030 Application was filed as a continuation of App. No. 11/788,259 ("'259 Application"), which was a continuation of App. No. 09/332,244 ("'244 Application"), which claims priority to the '807 Provisional. Ex. 1001, cover; Ex. 1011, ¶¶ 67-86.

During prosecution of the parent '259 Application, the Examiner issued an Office Action on September 1, 2009, rejecting certain claims as anticipated by US 5,699,107 to Lawler ("Lawler '107"). Ex. 1012 at 194-197. The Examiner also rejected several claims as being obvious in view of Lawler '107 and in further view of Official Notice taken by the Examiner that "storing downloaded programming for playback is notoriously well known in the art" and was advantageous because

"[s]toring programming locally provided instant access without network delay thus providing a very convenient way to access programs." Ex. 1012 at 198-199; *id.* at 194-197; Ex. 1011, ¶¶ 68-71. That feature appears in the independent claims of the '978 Patent. Ex. 1001, claims 1 and 5.

Also in the September 1st Office Action, the Examiner indicated that proposed dependent claims 21 and 44 contained allowable subject matter. Ex. 1012 at 206. In responding to the Action, Applicants did not respond to the Official Notice. Instead, Applicants re-wrote claims 21 and 44 in independent claim form, and a Notice of Allowance subsequently issued. *Id.* at 409-410, 427-428; Ex. 1011, ¶¶ 72-74.

During subsequent prosecution of the '030 Application (a continuation of the parent '259 application), Applicants filed a preliminary amendment introducing the concept of storing a retrieved program on user television equipment. Ex. 1009 at 2-8; Ex. 1011, ¶ 76. Applicants attempted to address rejections raised by the Examiner in the '259 Application's September 1st Office Action. Ex. 1009 at 9-10; Ex. 1011, ¶¶ 77-84. However, Applicants' arguments addressed US 5,805,763 to Lawler ("Lawler '763") rather than Lawler '107,[2] which was the reference asserted in the

[2] While Lawler '107 and Lawler '763 have similar inventors, assignee, and priority dates, Lawler '107 and Lawler '763 are not related by family and do not have identical specifications. For example, Lawler '107 notably lacks disclosure relating to recording device 23 that is present in Lawler '763.

September 1st Office Action. Ex. 1012 at 194. Applicants argued that Lawler '763 "fail[ed] to disclose storing a recorded program on user television equipment" and, further, that Lawler '763 taught away from this feature "because Lawler ['763] already stores programs on a remote server for later playback and because Lawler ['763] does not disclose that viewer station 16 includes storage capable of storing a program recorded on continuous media server 32." Ex. 1009 at 10-11; Ex. 1011, ¶¶ 80-81. Applicants' argument was incorrect and premised on a mischaracterization of Lawler '763. Ex. 1011, ¶¶ 81, 150, 163. Applicants also argued that the Official Notice was improper and requested that the Examiner provide a supporting reference. Ex. 1009 at 11-18; Ex. 1011, ¶¶ 82-84.

In response, rather than identifying a reference to support the Official Notice or pointing out Applicants' arguments failed to address the Lawler '107 reference applied in the '259 Application, the Examiner issued a Notice of Allowance indicating that claims 3-6 and 8-11 of the '030 Application were allowed. Ex. 1009 at 199; Ex. 1011, ¶ 85. In a direct contradiction to the Examiner's previous determination in the '259 Application that storing programming locally (as opposed to on a remote media server) was known to offer distinct advantages (Ex. 1012 at 198-199; Ex. 1011, ¶¶ 68-71), the Examiner's Notice of Allowance in the '030 Application stated that "merely adding a recording reference would likely be hindsight … as the continuous media server in the prior art of record enables a user

to watch the program at any time of the user's choosing and thus the user would not have any need to record the content." Ex. 1009 at 199-200; Ex. 1011, ¶ 85.

D. Earliest Priority Date for the Claims

The earliest entitled priority date for the '978 patent is June 11, 1999—the filing date of the earliest non-provisional application (App. No. 09/332,244)—because, as understood by a person having ordinary skill in the art ("PHOSITA"), the '807 Provisional fails to teach: "generating a retrieval request in response to a user request, wherein the retrieval request is generated by the interactive television program guide," "retrieving the program with the remote media server in response to the retrieval request," and "storing the retrieved program on user television equipment for later play back," as recited in independent claim 1. *Compare* Ex. 1010 at 10, *with* Ex. 1017 at 5-243; Ex. 1011, ¶¶ 89-99; *see Lockwood v. Am. Airlines, Inc*., 107 F. 3d 1565, 1572 (Fed. Cir. 1997). Independent claim 5 recites features that are substantially similar to those of independent claim 1 (Ex. 1001, claims 1, 5), and thus are not supported by the written description of the '807 Provisional for similar reasons. Ex. 1011, ¶¶ 91-99. Nevertheless, each reference discussed herein predates the filing date of the '807 Provisional.

E. The Scope and Content of the Prior Art

Using IPGs to generate record requests indicating a desire for a user to record a television program was well-known at the time of the '978 patent's alleged

invention. Ex. 1011, ¶¶ 103-109. Prior art such as Shteyn (Ex. 1004) and Killian (Ex. 1005) teach interactive television program guide systems and guides that generate record requests—in response to a user indicating a desire to record a television program—thereby causing a recording device to record the program. Ex. 1004 at 1:16-43, 2:53-59, 3:56-63, 4:19-29; Ex. 1005 at 2:13-34, 8:7-11, 15:12-35, 17:7-18:2, Fig, 7. As discussed below, Lawler '763 (Ex. 1002) also describes such systems and an interactive television program guide that generates a record request.

Similarly, it was known at the time of the alleged invention for video recording systems—in response to a user indicating a desire to record a television program—to record the program with a remote server. Ex. 1011, ¶¶ 110-115. Prior art such as Ang (Ex. 1006) and Shteyn teach video recording systems that provide recording with a remote server in response to a user indicating a desire to record a program. Ex. 1006 at 43-46, 48, Figs. 2-3; Ex. 1004 at 1:45-50, 2:7-11, 2:53-59, 3:56-4:1, Figs. 1-4. As discussed below, Lawler '763 also describes these well-known features.

Additionally, retrieving a television program from a remote server in response to a retrieval request was also well-understood at the time of the '978 patent's alleged invention. Ex. 1011, ¶¶ 116-125. Prior art such as Matsumoto (Ex. 1007), Shteyn (Ex. 1004), and Shimazaki (Ex. 1015) teach video recording systems that retrieve a program from a remote server in response to a user indicating a desire to retrieve

said program. Ex. 1007, ¶¶ [0001], [0002], [0013], Figs. 1, 2; Ex. 1004 at 1:39-63, 2:54-55, 3:24-36, 3:61-65, 4:1-3, 4:66-67; Ex. 1015, Abstract, ¶¶ [0025], [0027], [0029]-[0030].

It was also well-known for recording systems to store programs on user television equipment for later playback. Ex. 1011, ¶¶ 126-136. Prior art such as Lawler (Ex. 1002), Garfinkle (Ex. 1016), Matsumoto (Ex. 1007), and Shimazaki (Ex. 1015) all disclose storing programs on user equipment. Ex. 1002 at 10:53-56, 13:13-25; Ex. 1016, Abstract, Fig. 1, 2:42-60, 3:11-14, 5:13; Ex. 1003, Fig. 5, ¶¶ [0014], [0035], [0040], [0044]-[0045]; Ex. 1007, ¶ [0013]; Ex. 1015, ¶¶ [0027], [0029]-[0030], [0056]. As discussed below, Yamada (Ex. 1003) discloses storing a retrieved program on user television equipment for later playback.

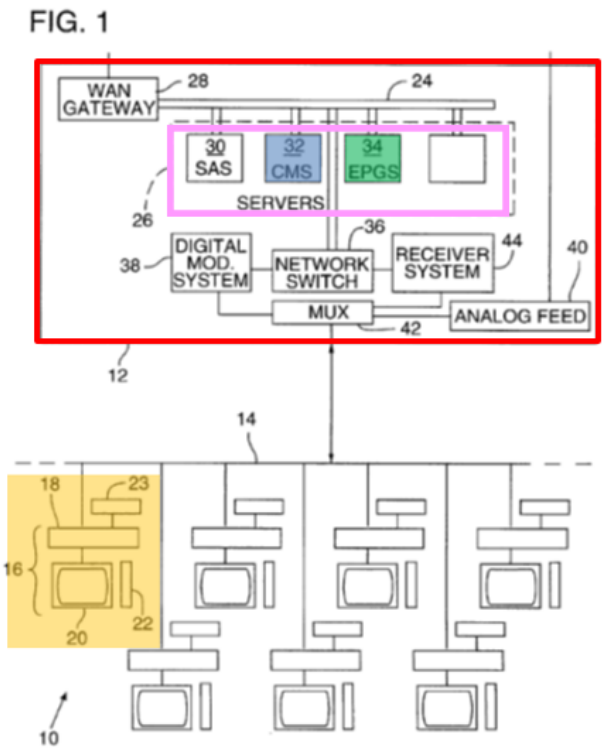
1. Lawler '763

Lawler '763 (Ex. 1002) issued on September 8, 1998, from an application filed on May 5, 1995, and is prior art under pre-AIA 35 U.S.C. § 102(a) based on the '978 patent's earliest non-provisional filing date. Ex. 1011, ¶ 145. Even if the '978 patent claims were entitled to the provisional filing date, Lawler '763 would still be prior art under pre-AIA 35 U.S.C. § 102(e).

Lawler '763 was not relied on as a basis for a rejection during prosecution of the parent application of the '978 patent. Rather, Lawler '107 was. However, during prosecution of the '978 patent Applicants incorrectly alleged that Lawler '763 was

asserted. Ex. 1009 at 9-10. Furthermore, Applicants mischaracterized the scope of Lawler '763 during prosecution of the '978 patent to secure allowance (*see* Section II.C; Ex. 1011, ¶¶ 78-85). This petition relies on Lawler '763 (hereinafter "Lawler"), which was never relied on as a basis for a rejection during prosecution of the '978 patent or its parent.

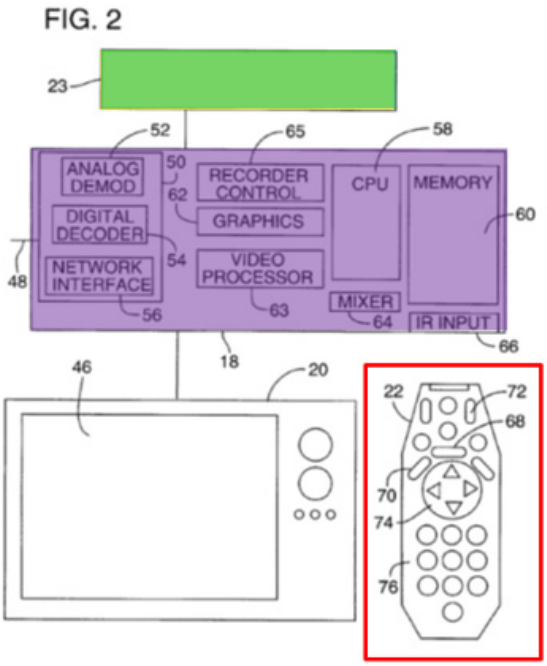
Lawler relates to an interactive viewing system that "allows a user to identify a program for recording using an interactive program guide…." Ex. 1002 at 1:9-14; Ex. 1011, ¶ 146. Lawler's interactive television system 10, as shown in Figure 1 (annotated below), "has a central head 12 [**red**] that supplies programming over a network 14 to multiple viewer stations 16 [**orange**] that are typically located in the homes of system users or subscribers." Ex. 1002 at 3:28-34, Figs. 1-2.



Ex. 1002, Fig. 1 (annotated).

"[T]he headend 12 … includes multiple computer servers 26 [pink] for performing various interactive system applications or functions." Ex. 1002 at 4:1-10; Ex. 1011, ¶ 160. Computer servers 26, "which store and process information at the head end, may include, for example, service and application servers 30, continuous media servers 32 [**blue**], and electronic program guide data servers 34 [**green**]." *Id.* at 4:6-10, Fig. 1 (annotated above). Continuous media servers 32 "provide storage and on-demand or near on-demand delivery of digitized video information," such as video programming, and are "used to store programs recorded at the headend 12 in response to a record tag." *Id.* at 4:23-32; Ex. 1011, ¶ 161.

Electronic program guide data server 34 stores "program schedule information" as well as "additional information about any particular program, such as a brief description of the program, the stars of the program" (Ex. 1002 at 4:35-45), which may be used by viewer station 16 to generate a program guide. *Id.* at 7:23-31, 8:20-28, 10:4-8, Fig. 3; Ex. 1011, ¶¶ 147, 150, 152. Lawler discloses that "[v]arious functions of the servers described here may be combined so as to be carried out by a single server." Ex. 1002 at 4:54-57.



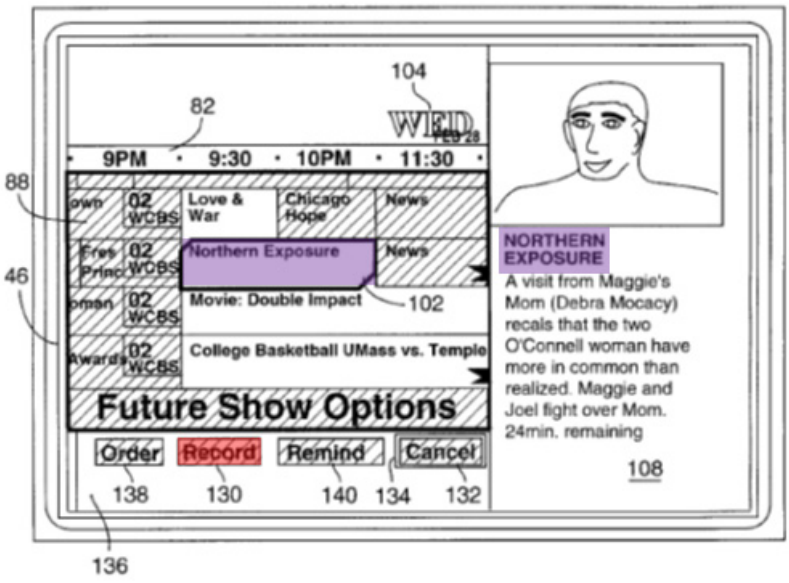
Ex. 1002, Fig. 2 (annotated).

As shown in Figure 2 (annotated above), viewer station 16 includes an interactive station controller 18 (**purple**), *e.g.* a set top box, video display 20, user input device 22 (**red**), and recording device 23 (**green**). Ex. 1002 at 1:55-59, 3:34-39, 5:38-45; Ex. 1011, ¶ 148. Controller 18 may be controlled by users via input

device 22 (Ex. 1002 at 3:39-42, 6:57-7:9), and receives television programming from the headend 12 for display via video display 20. *Id.* at 1:59-61, 3:39-41, 5:21-56.

Interactive viewing system 10 includes one or more "interactive program guides" that provide "program schedule information identifying the times and channels for various programs" (*Id.* at 1:62-66, 7:10-12) and enable users to designate programs for recording with a recording device located at the head end. Ex. 1002 at 2:6-29, 4:28-30, 7:15-17; Ex. 1011, ¶¶ 152-159, 201. Lawler describes that users may navigate the IPG using input device 22 to select a program for recording. Ex. 1002 at 8:54-66, 10:45-58, Abstract; Ex. 1011, ¶¶ 152-159, 181, 198.

FIG. 6



Ex. 1002, Fig. 6

For example, as shown in Figure 6 (annotated above), users may select the "Northern Exposure" television program (**purple**) and activate the record icon 130

(**red**)—via the interactive television program guide—to set a record tag that is associated with the selected program and identifies the program for recording. Ex. 1002 at 2:6-10, 3:15-19, Abstract.

Lawler describes that the record tag serves "as a request to the system to record a program," and is monitored by viewing system 10 such that the head end controls a recording device to record the selected program. *Id.* at 12:58-59, 13:26-30; Ex. 1011, ¶ 159; *see also* Ex. 1002 at 2:6-10, 4:23-32, 12:30-32, 13:13-15. Lawler also describes that "[t]he recorded program is stored at the head end 12, preferably on the continuous media servers 32" (Ex. 1002 at 13:30-31), and that "[u]sers could then access the head end, on demand, to retrieve and view the recorded program." Ex. 1002 at 13:32-33; Ex. 1011, ¶¶ 149, 156, 162.

2. Yamada

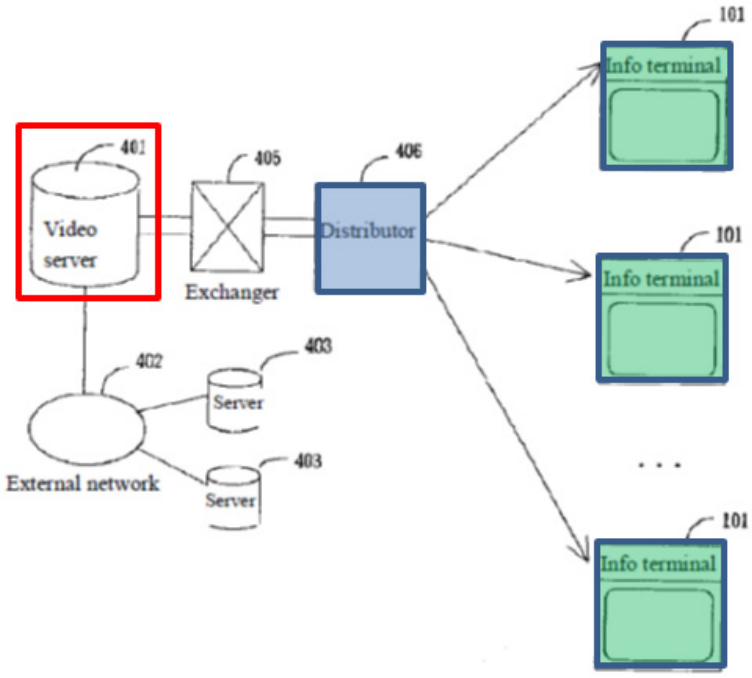
Yamada (Ex. 1003) is a Japanese Patent Application Publication published May 17, 1996, originally filed on October 27, 1994. Yamada is prior art under pre-AIA 35 U.S.C. § 102(b). Yamada was not before the Examiner during prosecution of the '978 patent. Ex. 1001 at 1-3; Ex. 1011, ¶ 164.

Yamada relates to "an online service system for providing various services including video information to a plurality of information terminals." Ex. 1003, ¶ [0001]. Recognizing deficiencies in prior cable broadcasting systems (*Id.*, ¶¶ [0002]-[0003]), Yamada proposed a solution with which users can use various

services via an online system that includes a central information storage and means for distributing (video) information from the central storage to information terminals. *Id.*, ¶¶ [0004]-[0005]; Ex. 1011, ¶¶ 167, 174.

Yamada discloses that, as shown in Figure 4 (annotated below), the online service system includes a plurality of information terminals 101 (**green**) that "provide[] information service to the user by displaying information," such as broadcast television programs, and is responsible for relaying user commands and video requests to a central server (**red**) (*e.g.*, video server 401). Ex. 1003, ¶¶ [0009], [0015]-[0016], [0018], Fig. 5. Information requested from video server 401 (*e.g.*, video information, program information, program schedule information) is "sent to a distributor 406 [**blue**] by an exchanger 405 composed of ATM [(asynchronous transfer mode)] or the like, and is further distributed to the information terminal 101" for display to the user. Ex. 1003, ¶¶ [0015], [0019]-[0021], [0029]; Ex. 1011, ¶¶ 167-168, 174.

[FIG. 4]



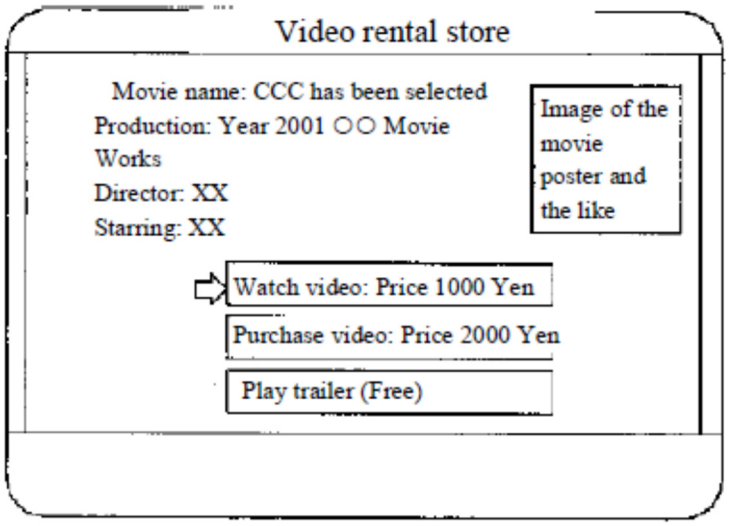
Ex. 1003, Fig. 4 (annotated).

Users may operate and control respective terminals 101 via remote control device 102. Ex. 1003, ¶¶ [0009], [0018], [0021], Fig. 2; Ex. 1011, ¶¶ 168, 170, 172. For example, users may navigate an on-screen interface (*e.g.*, an IPG) displayed via terminal 101 or request video information by selecting particular keys on the remote control. Ex. 1003, ¶¶ [0010]-[0011], [0016], [0021]-[0029], [0035], [0042]-[0045], Figs. 2, 12, 13, 17; Ex. 1011, ¶¶ 170-172, 198.

Yamada discloses that its IPG may be generated by a CPU (*e.g.*, CPU 501) of the information terminal based on information provided by video server 401 (Ex. 1003, ¶¶ [0021], [0026], [0035], [0042], Fig. 5) and is presented to the user in "an easy-to-understand manner," such as in the form of a movie theater or video rental

store, as shown below in Figure 14. Ex. 1003, ¶¶ [0024], [0028]-[0029], [0035], [0042]-[0043], Figs. 8, 11-14, 17; Ex. 1011, ¶¶ 170-173.

[FIG. 14]



Ex. 1003, Fig. 14

Users may access and view (on-demand) videos stored at the server 401 by selecting from a plurality of programs/titles via the on-screen interface. Ex. 1003, ¶¶ [0036]-[0039], [0043], Figs. 11-12, 13, 14; Ex. 1011, ¶¶ 170-172.

Recognizing a desire/need for users to maintain a personal library of video information at their respective information terminals, Yamada proposes using a storage device 520 at the information terminal to "record[] video information and the like on the storage medium 521 and play[] back it [*sic*] as necessary." Ex. 1003, ¶¶ [0040]-[0041]; Ex. 1011, ¶¶ 166, 169. After selecting a particular program via the on-screen interface, the user may request/purchase the selected program, thereby

causing the terminal to download/store the program to the storage device for later playback. Ex. 1003, ¶¶ [0044]-[0045], Fig. 17; Ex. 1011, ¶¶ 132-133, 170, 172-173, 180, 182, 187, 189, 193, 195, 198.

3. Ang

Ang (Ex. 1006) is a technical paper published in, and publicly available as of, January 1998. Ex. 1018, ¶¶ 14-21. Even if the '978 patent were entitled to its provisional filing date, Ang is still prior art under pre-AIA 35 U.S.C. § 102(a). Ang was not before the Examiner during prosecution of the '978 patent. Ex. 1001 at 1-3; Ex. 1011, ¶ 208.

Ang discloses an automated system for recording television programs in response to user recording requests received over a network. Ex. 1006 at 41-44, 48, 50, 51, Fig. 2. Users of Ang's system utilizes a client terminal to request either the recording of broadcast programs or the retrieving of previously recorded programs for playback. *Id.* at 43, 48. Ang further describes a video server "used for the storage and delivery of video streams to client terminals. The video server's database also contains information of the recording requests and the locations of the video files. Ex. 1006 at 46; *see also id.* at 44. Ex. 1011, ¶ 209.

4. Mankovitz

Mankovitz (Ex. 1008) is a U.S. Patent issued July 30, 1996, and constitutes prior art under pre-AIA 35 U.S.C. § 102(b). Mankovitz was not cited or applied during prosecution of the '978 patent. Ex. 1011, ¶ 246.

Mankovitz describes a system that records program guide data and program related information (PRI) for programs. Ex. 1008, Abstract, Table 1, 5:45-59, 8:13-65, 10:14-44, 11:45-46, 13:5-22; Ex. 1011, ¶ 247. Mankovitz describes that such information may be stored in a directory 33a of RAM 33 or on tape. Ex. 1008 at 4:58-59, 5:42-59, 10:15-44, 11:45-46, 13:5-22, Figs. 2, 3; Ex. 1011, ¶ 247.

Mankovitz's system "can capture data broadcast on the VBI and display it either concurrently with or at a later time to the data transmission." Ex. 1008 at 10:6-8; Ex. 1011, ¶ 250. Mankovitz further describes a remote controller unit 75, on which "[a] program identification (PGM ID) button 9724 is used to display the program title and other information of the program being viewed either direct from cable or airwaves or from tape." Ex. 1008 at 9:65-10:2; *see also id.,* 9:31-43, 10:20-29; Ex. 1011, ¶ 251.

III. IDENTIFICATION OF CHALLENGE PURSUANT TO 37 C.F.R. § 42.104(B) AND STATEMENT OF THE RELIEF REQUESTED

Petitioner requests review on the following grounds under pre-AIA 35 U.S.C. § 103(a):

Ground	Prior Art	Claims Challenged
A	Lawler in view of Yamada	1, 5
B	Lawler in view of Yamada and Ang	2-3, 6-7
C	Lawler in view of Yamada and Mankovitz	4, 8

The presented grounds are not redundant of the grounds set forth in two other petitions directed to the '978 patent: Petition 2 (Shteyn-Kenner, Shteyn-Ang-Kenner) and Petition 3 (Shteyn, Shteyn-Kimmich, Shteyn-Kimmich-Yamada). The following summarizes the differences among the petitions.

New prior art: Petitions 2-3 rely on references not considered by the examiner (Shteyn, Ang, Kenner, Kimmich, Yamada). Petition 1 relies on a primary reference (Lawler '763) in a two reference § 103 combination. Lawler '763 was cited but not applied by the examiner (*i.e.*, not a basis for a rejection) during the prosecution of either the '978 patent or its parent. Rather, Lawler '107 was applied in the parent application as a single reference § 103. Nevertheless, Applicant incorrectly argued against Lawler '763 in a preliminary amendment to secure allowance of the '978 Patent.

Lawler '763 is not cumulative of Lawler '107 because, while both patents share the same inventors, the patents do not share a family, and the respective

specifications are not identical and contain material differences. Lawler '107 relates to a "Program Reminder System" whereas Lawler '763 relates to a "System and Method for Automatically Recording Programs in an Interactive Viewing System." Lawler '763 discloses recording devices both at the viewer station (*e.g.*, recording device 23) and the head end (*e.g.*, the continuous media servers), while Lawler '107 does not. As further described below, while Applicant argued that Lawler '763 did not comprise storage capable of storing a program recorded on continuous media server, recording device 23 constitutes such storage. The Examiner erred by failing to identify this storage feature of Lawler '763 (potentially because the Examiner believed that Applicant was referencing Lawler '107 which does not describe such a recording device).

The Examiner further erred by failing to provide support for Official Notice taken in the parent prosecution that "storing downloaded programming for playback is notoriously well known in the art. Storing programming locally provided instant access without network delay thus providing a very convenient way to access programs." Ex. 1012 at 198-199. Rather than supporting the Official Notice with a reference (*e.g.*, any of Lawler (Ex. 1002), Garfinkle (Ex. 1016), Matsumoto (Ex. 1007), or Shimazaki (Ex. 1015)), the Examiner contradicted a previous determination of obviousness and issued a notice of allowance.

Additionally, Petition 1 relies on secondary references not considered by the

examiner (Yamada, Ang, Mankovitz). While U.S. Patent No. 5,134,719 to Mankovitz (Mankovitz '719) was cited during prosecution of the '978 Patent, U.S. Patent No. 5,541,738 to Mankovitz (Ex. 1008) is not cumulative of Mankovitz '719 (the patents do not share a family nor are the specifications similar).

Further, this petition sets forth a combination (*e.g.*, Lawler with Yamada) that was not applied or considered by the patent office. In view of the above, the arguments raised by the Examiner during prosecution of the parent overlap minimally, if at all, with the below grounds because of the material differences in the references and how they are combined and applied. ***Different Approaches to the Claim Limitations***: The prior art combinations used in the three petitions teach the claim limitations in different ways.

For example, Lawler-Yamada (Pet. 1) treats the record request and the retrieval request as requests occurring at separate times. Shteyn-Kenner (Pet. 2) and Shteyn (Pet. 3) treat the record request and the retrieval request as contemporaneous requests. As another example, Shteyn-Kenner (Pet. 2) differs from both Lawler-Yamada (Pet. 1) and Shteyn-Kimmich-Yamada (Pet. 3) based on Yamada's robust disclosure of the generation of a retrieval request, including generation by an IPG.

Thus, each of the petitions apply different art used in different ways and are not redundant.

A. Level of Ordinary Skill

A PHOSITA would have had a bachelor's degree in computer science, electrical engineering, computer engineering, or a similar discipline, and at least two years of cumulative experience with interactive program guides, set-top boxes, video recording devices, and techniques for delivering content or program guides over communication networks, such as a cable system, a local-area network, or the Internet. Ex. 1011, ¶ 19. A PHOSITA could have equivalent experience in industry or research, such as designing, developing, evaluating, testing or implementing these technologies. *Id.*

B. Claim Construction

All claim terms not discussed below should be given their ordinary and customary meaning in light of the specification. This is not a waiver of any argument in any future proceedings that might involve applying the claims in a different context. Nor does Petitioner waive its right to raise additional issues of claim construction that might be relevant to litigation but irrelevant to this proceeding.

1. "record request"

The term "record request", as recited in claims 1 and 5, is expressly defined in the specification of the '978 patent (Ex. 1001 at 10:46-52), and a PHOSITA reading the specification would have understood "record request" to mean "any command, request, message, remote procedure call, object based communication, or any other type of interprocess or inter-object based communication that allows the

program guide to communicate information on the program that the user wishes to record to the media server." Ex. 1011, ¶ 139.

2. "retrieval request"

The term "retrieval request", as recited in claims 1 and 5, is defined in the specification of the '978 patent (Ex. 1001 at 24:39-45), and a PHOSITA reading the specification would have understood "retrieval request" to mean "any command, request, message, remote procedure call, object based communication or any other type or interprocess or interobject based communication whereby the program guide may communicate information to the remote media server 24 or local media server 29 specifying which program the user wishes to receive." Ex. 1011, ¶ 140.

3. "to record … on-demand"

The term "to record … on-demand," as recited in claims 1 and 5, is defined in the specification (Ex. 1001 at 9:9-15), and a PHOSITA reading the specification would have understood "to record … on-demand" to mean to "record[] a program or program guide data in response to a user's selection of a program for recording." Ex. 1011, ¶ 141.

4. "present[ing] to the user the program guide data … as if the [retrieved/associated] program were being originally aired"

A PHOSITA at the time of the alleged invention would have understood the phrase "present[ing] to the user the program guide data … as if the [retrieved/associated] program were being originally aired" to mean "during play

back of a retrieved program, program guide data associated with the retrieved program is presented to the user in an appropriate format for display and for use by the user as if the user were viewing the retrieved program when it was originally aired." Ex. 1011, ¶¶ 142-143.

This construction is supported by the specification. In particular, the '978 patent describes that "[t]he program guide may access the retrieved program guide data and may present it to the user so that the user may interact with the data during playback just as when the program was originally aired." Ex. 1001 at 25:52-55. The specification also describes that "[t]he program guide ... instructs user television equipment 22 to provide the programs … and any associated data in the appropriate format for display on display device 45 and for use by the user as if the user were viewing the programs when they were originally aired." Ex. 1001 at 30:38-43.

C. Claim Constructions from Co-Pending Litigation

In the co-pending litigation, Comcast and Rovi have proposed constructions of additional terms, whose constructions do not alter the analysis of this petition but are provided for completeness and convenience. Ex. 1011, ¶¶ 275-276. A chart outlining the parties' proposed constructions is provided below. *See also* Exs. 1022 & 1023. The challenged claims would be invalid for the reasons stated herein regardless of which proposed construction is applied. *See* Ex. 1011, ¶ 276.

Term	Comcast's Proposed Construction	Rovi's Proposed Construction
user television equipment (claim 1)	One or more devices at a user site for receiving television signals such as a set-top box, digital television receiver, high definition television (HDTV) receiver, or personal computer television (PC/TV). A mobile device is not user television equipment. *See* Ex. 1022 at 2[3].	Equipment that is capable of generating the display of an interactive television program guide and receiving a video program. *See* Ex. 1023 at 2.
interactive program guide television equipment (claims 5, 8)	Equipment for receiving television signals such as a set-top box, digital television receiver, high definition television (HDTV) receiver, or personal computer television (PC/TV) and on which an interactive television program guide is implemented. A mobile device is not interactive program guide television equipment. *See* Ex. 1022 at 3.	Equipment on which the interactive television program guide is implemented. *See* Ex. 1023 at 2.
interactive television program guide (claims 1, 5, 8)	Application that allows user navigation through and interaction with television program listings and causes	Software that generates for display program guide data on user television equipment, allows users to navigate through and

[3] The parties have discussed compromise constructions in an effort to narrow the claim construction disputes that must be resolved in the litigation.

Term	Comcast's Proposed Construction	Rovi's Proposed Construction
	display of program information on user television equipment based on user commands. *See* Ex. 1020, ¶ 15; Ex. 1021 at 10-14*;* Ex. 1022 at 3-4.	interact with program guide data based on user commands, and acts on such commands. *See* Ex. 1023 at 2.
generating a record request [] generated by an interactive television program guide…generating a retrieval request [] generated by the interactive television program guide (claim 1)	The same interactive television program guide generates both the record and retrieval requests. *See* Ex. 1022 at 4.	Rovi objects to this "term." Comcast cuts out claim language to stitch together a claim "term" that is not part of the claim. Comcast deleted 35 words AND an entire limitation to stitch together four different clauses/words as though it's a claim term. Rovi reserves the right to offer a claim construction if Comcast proposes a claim term. Plain and ordinary meaning; no construction necessary. *See* Ex. 1023 at 2.
wherein the interactive television program guide is configured to: generate a record request…and generate a retrieval request (claim 5)	The same interactive television program guide generates both the record and retrieval requests. *See* Ex. 1022 at 4-5.	Plain and ordinary meaning; no construction necessary. *See* Ex. 1023 at 2-3.
remote media server (claims 1, 5, 6, 7, 8)	Media server not at the user site. *See* Ex. 1022 at 5.	A server, remote from the user television equipment, that records programs, program guide data, or any suitable combination thereof and

Term	Comcast's Proposed Construction	Rovi's Proposed Construction
		supplies either or both to user television equipment in response to requests generated by the interactive television program guide. *See* Ex. 1023 at 3.

IV. SPECIFIC GROUNDS FOR UNPATENTABILITY

A. Ground A: Obviousness of Claims 1 and 5 in View of Lawler and Yamada

With reference to the claim listing appendix, Lawler discloses limitations [1A]-[1G] in claim 1. To the extent Patent Owner argues that Lawler does not expressly disclose [1E]-[1G], Yamada discloses these limitations. Yamada also discloses [1H]. Ex. 1011, ¶¶ 144, 175.

As explained below, a PHOSITA would have found it obvious to combine Lawler with Yamada to arrive at the alleged invention of claim 1. *Id.*, ¶¶ 175-196.

1. Independent Claim 1

i. [1A]: A method for use in an interactive television program guide system in which television programs are recorded and played back on-demand by a remote media server for a number of users, the method comprising:

To the extent the preamble is limiting, as shown below in Figure 1 (annotated), Lawler's interactive viewing system 10 ("interactive television program guide system") includes a head end 12 (**red**) comprising servers 26 (**pink**), which include

continuous media servers 32 (**blue**) ("remote media server") that "provide storage and on-demand or near on-demand delivery of digitized video information" and are "used to store programs recorded at the head end 12 in response to a record tag." Ex. 1002 at 4:23-30, 3:28-34, Fig. 1.

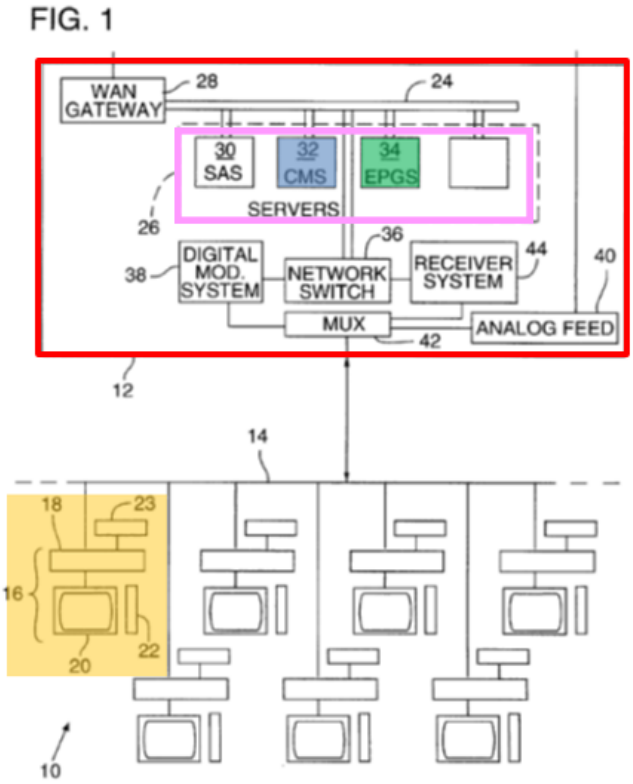


Exhibit 1002, Fig. 1

Viewing system 10 also includes multiple viewer stations 16 (**orange**) that accept user input and receive television programming from head end 12 (Ex. 1002 at 3:31-41, 5:17-18), thereby enabling multiple "[u]sers [to] access the head end, on demand, to retrieve and view the recorded program." Ex. 1002 at 13:32-36.

Thus, Lawler discloses the limitations recited in [1A]. Ex. 1002 at 1:53-61, 2:23-28, 7:10-18, 10:53-58, 12:29-30, 13:26-31, Figs. 1-2, 6; Ex. 1011, ¶ 198.

ii. [1B]: generating a record request in response to a user indicating a desire to record a program on-demand with the remote media server,

Lawler's viewing system 10 generates a record tag ("record request") in response to a user indicating a desire to record a program on-demand with head end 12 and continuous media servers 32 ("remote media server"). Lawler discloses that "user[s] can quickly and easily select a program for recording by setting a record tag that designates the selected program for recording." Ex. 1002 at 3:15-19, 2:6-13, Abstract. Viewing system 10 sets a record tag ("generating a record request") and stores the record tag at the head end in response to a user identifying a program for recording, for example, by "activating the Record button 130" on the program guide using input device 22 ("in response to a user indicating a desire to record a program on-demand…"). Ex. 1002 at 2:6-13, 3:15-19, 4:23-28, 6:57-65, 10:44-49, 12:29-61, 13:8-12, 13:39-43, Abstract; Ex. 1011, ¶ 198; *see* Ex. 1001 at 10:43-52, 22:1-7.

Additionally, Lawler discloses that media servers 32 are used by viewing system 10 to store programs identified by the user for recording via the record tags ("record a program on-demand with the remote media server"). Ex. 1002 at 4:28-30, 13:27-31; Ex. 1011, ¶ 198.

Thus, Lawler discloses the limitations recited in [1B]. Ex. 1002 at 3:15-19, 4:23-30, 12:29-30, 12:58-61, 13:27-31, 13:39-43; Ex. 1011, ¶ 198.

iii. [1C]: wherein the record request is generated by an interactive television program guide;

As explained in the preceding section, Lawler's viewing system 10 generates a record tag ("record request") in response to a user indicating a desire to record a program on-demand with continuous media servers 32. Ex. 1002 at 4:23-30, 10:52-57, 12:29-30, 13:26-31, Abstract.

Lawler's viewing system 10 includes one or more IPGs—which may be a software application ("interactive television program guide")—including "a program time guide which provides program schedule information identifying the times and channels for various programs" and "allow[s] a user to navigate through the displayed program information and identify selected programs." Ex. 1002 at 1:62-2:5, 7:10-27; Ex. 1011, ¶ 198.

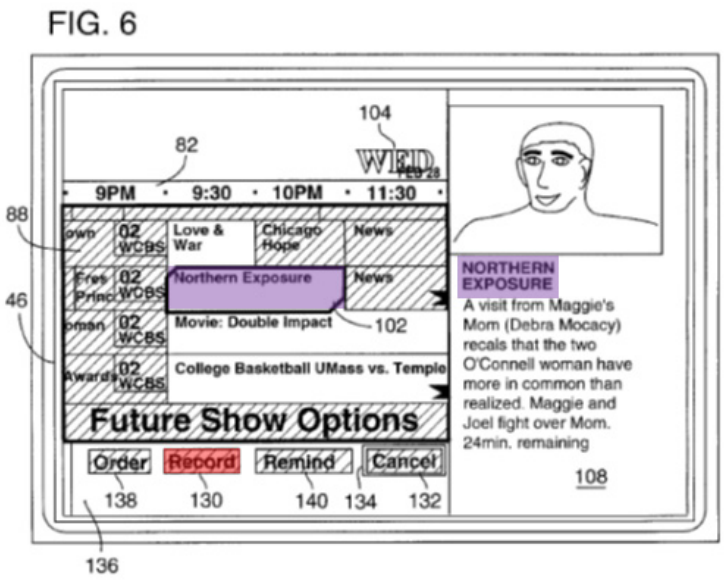


Exhibit 1002, Fig. 6

As shown in Figure 6 (annotated above), the user may "select a program [**purple**] for recording by setting a record tag that designates the selected program for recording" via the on-screen program guide, which is generated by the user's interactive station controller 18 (*e.g.*, set-top box 18). Ex. 1002 at 2:6-16, 3:14-21, 7:15-27, 10:4-8; Ex. 1011, ¶ 198; *see also* Ex. 1002 at 5:39-6:27, 9:34-38, Fig. 4. More specifically, the user may utilize input device 22 to activate the Record button 130 (**red**) displayed via an options menu of the on-screen program guide. Ex. 1002 at 10:52-11:6, 11:24-31, 12:29-30, 3:39-41, 6:57-61.

For example, in response to activating Record button 130 on a future program options menu, the on-screen program guide displays a record options menu enabling the user to select a frequency of the program recording via the on-screen program guide (Ex. 1002 at 12:29-36, Fig. 9), thereby causing the program guide and

respective viewer station to generate a corresponding record tag ("record request"), which is then stored to the head end. *Id.* at 12:46-61, 13:38-42, 1:53-55, 2:12-13, 3:39-44, 6:67-7:5, 11:24-31, 12:61-13:12, Fig. 7; Ex. 1011, ¶ 198.

Thus, Lawler discloses the limitations recited in [1C]. Ex. 1002 at 2:3-13, 3:15-21, 10:42-50, 11:23-31, 12:29-57, Figs. 5, 6, 9-10; Ex. 1011, ¶ 198.

iv. [1D]: recording the program with the remote media server in response to the record request;

As explained above concerning [1B], Lawler's viewing system 10 generates a record tag in response to a user indicating a desire to record a program on-demand with the head end and continuous media servers. Section IV.A.1.ii, *supra*. Additionally, Lawler discloses that viewing system 10 records a selected program at the head end via the continuous media servers ("remote media server") in response to a generated record tag ("record request"). Ex. 1002 at 4:28-30, 12:58-61, 13:13-15, 13:26-31, 2:8-12, 2:24-27, 3:14-21, 10:53-58, 12:29-30; Ex. 1011, ¶ 198.

Thus, Lawler discloses the limitations recited in [1D]. Ex. 1002 at 2:6-29, 4:23-32, 10:53-58, 13:26-43; Ex. 1011, ¶ 198.

v. [1E]-[1H]

Element [1E] relates to generating a retrieval request, [1F] states the retrieval request is generated by the interactive program guide, and [1G]-[1H] describe the results of the retrieval request: retrieving the program ([1G]) and storing the retrieved program on user equipment for later play back ([1H]). As set forth below,

Yamada discloses storage and retrieval techniques that would have been obvious to combine with Lawler's system, and thus, Lawler-Yamada teaches [1E]-[1H].

a. **[1E]: generating a retrieval request in response to a user request,**

Lawler's system generates a request to retrieve a program from media servers 32 ("retrieval request") in response to a user specifying which program they wish to retrieve/view ("in response to a user request"). As explained above concerning [1D], Lawler discloses that viewing system 10 records a program at the head end via the media servers 32 in response to a generated record tag. *See* Section IV.A.1.iv; Ex. 1011, ¶ ¶ 198; Ex. 1002 at 4:28-30, 12:58-61, 13:13-31. Lawler further discloses that "recorded and stored program[s] can then be *retrieved* by the user for display at the viewer station" (Ex. 1002 at 2:26-28 (emphasis added) (the claimed "retrieval request") and that "[t]he recorded program [is] provided to the user that set the record tag, *at the user's request*, over the network 14" (the claimed "in response to a user request"). Ex. 1002 at 4:31-33 (emphasis added), 2:27-29, 13:32-33.

Lawler further discloses that viewer station 16 accepts user commands via input device 22—for example, to control/operate interactive station controller 18 and the on-screen program guide—and engages in two-way communication with head-end 12 via network 14. Ex. 1002 at 3:39-44, 5:30-50, 6:59-7:5, 7:23-27, 9:37-38, 8:54-9:9, Figs. 1-2; Ex. 1011, ¶ 198. For example, when the user desires to record a television program, the user may operate input device 22 to activate the Record

button 130 displayed via the program guide. Ex. 1002 at 10:41-46. Input device 22 transmits user commands ("user request") to CPU 58 of the interactive station controller 18 for further processing (Ex. 1002 at 2:24-29, 4:30-32, 6:7-13, 6:50-7:5, 10:56-58, 13:8-42), thereby causing Lawler's system to perform the user command, such as generating a record tag associated with a program designated by the user or a retrieval request for the recorded program. Ex. 1002 at 2:8-13, 3:12-21, 7:15-27, 10:42-58, 12:29-34, 12:57-61, Fig. 6.

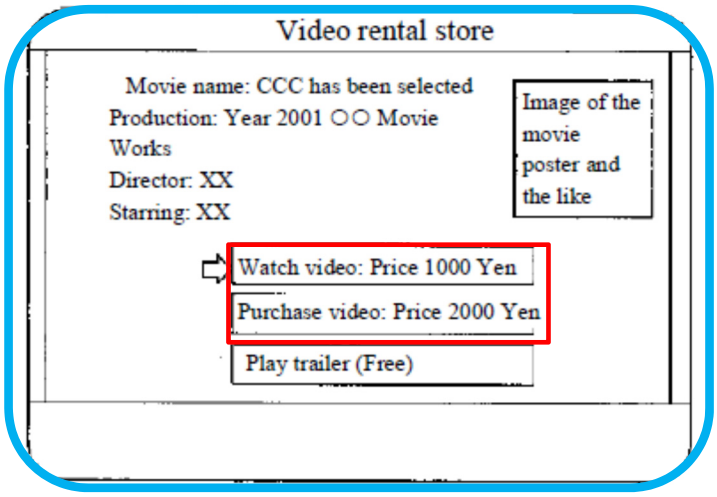
In view of the foregoing, including that "recorded and stored programs can … be retrieved by the user for display at the viewer station" at the user's request, Lawler's system discloses generating a request or command communicating information—from viewer station 16—to head end 12 specifying which program the user wishes to retrieve and view. Ex. 1002 at 2:28-29, 3:39-41, 4:60-5:3, 5:49-62, 6:9-13, 6:67-7:3; 13:33-38, Ex. 1011, ¶ 198; *see* Ex. 1001 at 24:33-45.

To the extent Patent Owner argues that Lawler does not disclose [1E], Yamada does. Ex. 1003, ¶¶ [0005], [0015]-[0021], [0029], [0035]-[0038], [0042]-[0045]. Yamada discloses an online service system comprising a remote video server 401 that distributes video programs to information terminal 101. Ex. 1003, ¶¶ [0005], [0014]-[0016], [0037]-[0039], [0044]-[0045]. Users may control and "give[] instructions to the information terminal 101 by means of the remote control 102, for example by pressing a specific button." Ex. 1003, ¶¶ [0025], [0035], [0042];

see also id., ¶¶ [0009], [0011], [0016], [0026]-[0029], [0036]-[0039], [0043]-[0044]; Ex. 1011, ¶ 198.

For instance, as shown in Figure 14 (annotated below), Yamada discloses that users may request a video program (**red**) from the server 401 on-demand by using the remote control and on-screen menu/guide (**blue**) to specify which program they wish to retrieve and view ("user request"). Ex. 1003, ¶¶ [0016], [0035]-[0039], [0040]-[0044], Figs. 1-2.

[FIG. 14]



Ex. 1003, Fig. 14

After users select a particular program/title ("user request"), the CPU 501 of the information terminal 101 communicates information indicating a request/command to retrieve the selected program ("retrieval request") to the video server 401, which "sends out the designated video…to the information terminal 101 based on the communicated information." Ex. 1003, ¶¶ [0037]-[0038], [0044]-[0045]; *see* Ex.

1001 at 24:33-45; *see also* Ex. 1003, ¶¶ [0019], [0036], [0039], [0042]-[0043]. Yamada thus discloses the claimed generating a retrieval request (the request/command communicated by the CPU to the video server) in response to a user request (the user selecting a program/title via the on-screen guide and remote control device). Ex. 1011, ¶ 198.

It would have been obvious to incorporate Yamada's teachings into Lawler's interactive station controller 18 such that Lawler's viewer station 16 (*e.g.*, interactive station controller 18) generates a request/command to retrieve a selected program ("retrieval request") stored at a media server (*e.g.*, servers 32), as expressly taught by Yamada. Ex. 1011, ¶¶ 176, 190-192.

Yamada recognized drawbacks associated with on-demand video systems that provide playback of programs from a remote server. Ex. 1003, ¶ [0040]; Ex. 1011, ¶ 179. As a solution, Yamada proposed including a storage device at the user terminal to locally record programs retrieved from a remote server pursuant to a retrieval request, thereby creating a "personal library" of recorded programs. Ex. 1003, ¶¶ [0040]-[0041], [0043]-[0045]; Ex. 1011, ¶¶ 180, 189. Lawler's interactive station controller 18—implemented via Yamada's express teachings—would improve Lawler's system and advantageously enable users to request retrieval of programs for storage and later playback on-demand. Ex. 1003, ¶¶ [0041], [0043]-[0045]; Ex. 1011, ¶¶ 180, 183, 190-192. Further, retrieving and storing programs

locally would "reduce the load on the video server"—as recognized by Yamada (Ex. 1003, ¶ [0040])—which would ultimately improve the viewing experience by avoiding delivery issues caused by overloaded servers. *See, e.g.,* Ex. 1014, Abstract, 1:52-57, 5:53-57; *see also, e.g.,* Ex. 1013 at 2:23-41, 3:1-30; Ex. 1011, ¶ 180. Such enhanced functionality would have been desirable to viewers. Ex. 1011, ¶¶ 165, 175-184, 187, 194.

Additionally, incorporating the teachings of Yamada into Lawler's system would have been merely using known techniques to improve similar devices. Ex. 1011, ¶¶ 184-192; *KSR Intern. Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007).

Yamada's program retrieval and storage techniques would have improved Lawler's interactive station controller in the same way that they improved Yamada's system, for example, by enabling users to request retrieval of programs from Lawler's continuous media servers 32 and providing the interactive station controller with local storage for storing the retrieved programs. Ex. 1011, ¶¶ 184-187, 189-191. Such an improvement would have enabled users to play-back programs on-demand from a personal media library maintained locally, rather than playing back recorded programs from a remote server. Ex. 1011, ¶ 189. Yamada discloses a device (*e.g.*, information terminal) comparable to and compatible with Lawler's viewer station, evidenced by similar hardware (*e.g.,* Lawler's CPU 58, Yamada's CPU 501; Lawler's Memory 60, Yamada's ROM 506 and RAM 507; Lawler's

recording device 23, Yamada's storage device 520 and storage medium 521; Lawler's video display 20, Yamada's display device 510; Lawler's user input device 22, Yamada's remote control 102; Lawler's communication interface 56, Yamada's communication interface 502) and functionalities. *Compare* Ex. 1002 at 6:7-13, 6:50-56, 6:61-7:3, 10:56-58, 13:8-12, 13:26-42, Fig. 2; *with* Ex. 1003, ¶¶ [0018], [0019], [0021], [0025], [0026], [0029], [0030], [0035]-[0038], [0042], [0044], [0045], [0050], Figs. 5, 15; Ex. 1011, ¶¶ 181, 185.

Furthermore, incorporating Yamada's teachings into Lawler's system would have been merely applying known techniques to a known device ready for improvement. Ex. 1011, ¶¶ 193-196. The device to be improved is Lawler's interactive station controller. Ex. 1011, ¶¶ 184, 193. Yamada discloses the known techniques of retrieving programs from a remote server (by generating a retrieval request) and storing the programs onto a local user device for later playback. Ex. 1003, ¶¶ [0005], [0015]-[0022], [0025]-[0030], [0035]-[0038], [0040]-[0042], [0044]-[0046], [0049], [0053], Figs. 5, 14, 16, 17; Ex. 1011, ¶ 193. Additionally, Yamada's program retrieval and storage techniques are applicable to Lawler's interactive station controller given the above-identified similarities between these devices. Ex. 1011, ¶¶ 194, 196. A PHOSITA would have recognized that enabling Lawler's interactive station controller to request retrieval of media content from a remote server for storage at a user device would have yielded predictable results

(*e.g.*, the interactive station controller being able to request retrieval from the continuous media servers though a generated retrieval request) and resulted in an improved system. Ex. 1011, ¶¶ 188, 192-196.

Finally, a PHOSITA would have reasonably expected success in incorporating Yamada's teachings into Lawler's system. Ex. 1011, ¶ 196. First, Yamada's retrieval and storage techniques were designed to improve conventional on-demand video systems lacking local storing of media as personal libraries (*e.g.*, Lawler's system). Additionally, modifications to Lawler's recording system and interactive controller, such as retrieval and storage techniques, would have been readily apparent to a PHOSITA. Ex. 1002 at 2:36-39, 14:38-44; Ex. 1003, ¶¶ [0040]-[0041], [0045]; Ex. 1011, ¶¶ 187-189, 192, 194.

Second, as understood by a PHOSITA, incorporating Yamada's teaching in Lawler's system would have involved a simple modification to the software and/or control logic executed by Lawler's CPU 58 to cause the interactive station controller to (i) generate/communicate a retrieval request in response to a user indicating a desire to view a program (Ex. 1002 at 2:25-29, 13:32-37; Ex. 1003, ¶¶ [0015], [0041], [0043]-[0045]), (ii) retrieve the program with the servers 32 (*Id.*), and (iii) store the program—retrieved from media servers 32—to a local storage device for later playback (Ex. 1002 at 2:10-22, 5:38-47, 6:31-56, 7:24-27, 9:63-65, 13:20-25, Fig. 2, claim 3; Ex. 1003, ¶¶ [0041], [0044], [0045]). Ex. 1011, ¶ 196.

Third, Lawler and Yamada share similar components and features, thus increasing the likelihood of compatibility. Ex. 1011, ¶¶ 181, 185, 194, 196. Like Lawler's CPU 58 (Ex. 1002 at 6:7:27, 6:56-7:3, 9:44-66, 10:15-30, 14:16-29), Yamada discloses using a central processing unit (*e.g.*, CPU 501) to control the operations and functions of the media system, including generating and displaying the program guide and other graphics/images, controlling the selection of video programs, and carrying-out operations corresponding to remote control commands—such as requesting video programs. Ex. 1003, ¶¶ [0018]-[0019], [0021], [0025]-[0026], [0030], [0035], [0037]-[0038], [0042], [0044]-[0045]; Ex. 1011, ¶¶ 151, 169, 172, 180-181, 198.

Thus, Lawler-Yamada teaches the limitations recited in [1E]. Ex. 1011, ¶ 198.

b. **[1F]: wherein the retrieval request is generated by the interactive television program guide;**

As explained above concerning [1E], Lawler discloses that users may use input device 22 to generate commands that control/operate interactive station controller 18, which communicates said commands to—and retrieves video programming from—the head-end 12 via network 14. *See* Section IV.A.1.v.a; *see also* Ex. 1002 at 1:59-61, 2:27-29, 3:30-44, 4:23-28, 5:30-50, 6:59-7:5, 7:23-27, Fig. 1.

Lawler discloses that users may "quickly and easily identify and select a desired program using an interactive program guide" (Ex. 1002 at 1:46-50, 2:3-5,

6:7-13, 7:10-12) and access the recorded program on-demand from head end 12 and media servers 32. Ex. 1002 at 4:30-32, 2:27-29, 13:32-35.

In view of the foregoing disclosure, Lawler discloses that its program guide ("interactive television program guide") generates a request or command communicating information to head end 12 specifying the program the user wishes to retrieve/view ("retrieval request"). Ex. 1002 at 2:24-29, 4:30-32, 13:26-33; Ex. 1011, ¶ 198; *see* Ex. 1001 at 24:33-45. For instance, users may select and access a previously recorded program using the program guide, for example, by identifying the recorded program via a past program options menu. Ex. 1011, ¶ 198; *see also* Ex. 1002 at 13:53-14:2, Fig. 4.

To the extent Patent Owner argues that Lawler does not disclose [1F], Yamada does.

Yamada discloses that the CPU 501 controls terminal 101, which provides information to users and is responsible for communicating requests and user desires to the server 401. Ex. 1003, ¶¶ [0015]-[0016], [0019], Figs. 4-5. Yamada also discloses that the CPU generates—based on information received via the server 401 and stored at RAM 507—an interactive on-screen interface/guide that enables users to visually and intuitively browse/identify programs for on-demand viewing. Ex. 1003, ¶¶ [0021], [0025]-[0026], [0035]-[0037], [0042], Figs. 11-12, 14. Further, as explained above concerning claim [1E], Yamada discloses that CPU 501 of the

terminal 101 communicates information indicating a program request—made by a user via remote control 102 and on-screen interface—to the server 401 in order to retrieve the requested program. *See* Section VII.A.1.v.a; Ex. 1003, ¶¶ [0038]-[0039], [0044]-[0045]. Yamada thus discloses that the interactive television program guide (the on-screen guide implemented via the CPU of the user information terminal) generates the retrieval request (the request/command communicating information to the video server specifying which program the user wishes to retrieve). Ex. 1011, ¶ 198.

As explained in Section IV.A.1.v.a, a PHOSITA would have found it obvious to apply Yamada's teachings to Lawler's interactive system controller, *e.g.*, resulting in the Lawler-Yamada IPG generating a retrieval request and sending the request to head end 12, similar to Lawler's disclosure of generating and sending record tags. Ex. 1002 at 6:7-13, 6:50-56, 6:61-7:3, 10:56-58, 13:8-12, 13:26-42; Ex. 1003, ¶¶ [0040]-[0041], [0043]-[0045]; Ex. 1011, ¶¶ 190-192, 195-196. As explained in Section IV.A.1.v.a, a PHOSITA would have implemented Lawler's IPG using Yamada's express teachings in order to generate a retrieval request and allow Lawler's servers 32 to (i) retrieve programs that satisfy the user's request, (ii) provide the identified programs to Lawler's viewer station 16, and (iii) store the programs locally for later playback. *Id*.

Thus, Lawler-Yamada teaches the limitations recited in [1F]. Ex. 1011, ¶ 198.

c. **[1G]: retrieving the program with the remote media server in response to the retrieval request; and**

Lawler discloses that the media server 32 ("remote media server") of the head end 12 provides storage for recording programs designated by the user via a record tag. *See* Section IV.A.1.iv; Ex. 1002 at 4:28-30, 12:58-61, 13:13-15, 13:26-31, 2:8-12, 2:24-27, 3:14-21, 10:53-58, 12:29-30.

Lawler also discloses that users may access/retrieve—on demand—programs stored at the media server 32 (Ex. 1002 at 2:27-29, 4:23-25, 4:30-32, 13:30-35), and that the head end 12 supplies such video programming to a user's viewer station 16 and interactive station controller 18. Ex. 1002 at 2:27-29, 3:30-33, 3:39-41, 4:23-25, 5:49-50, 5:57-67, 6:7-24. Additionally, as explained above concerning [1E], Lawler's system generates a request or command communicating information to the head end specifying which program the user wishes to retrieve/view ("retrieval request"). Section IV.A.1.v.a, *supra*; *see* Ex. 1011, ¶¶ 190-192; *compare* Ex. 1001 at 24:33-45. Accordingly, Lawler's system retrieves a recorded program with the media server 32 in response to the retrieval request. Ex. 1011, ¶ 198.

To the extent Patent Owner argues that Lawler fails to disclose [1G], Yamada does.

As explained above concerning [1F], Yamada discloses that the on-screen guide/menu ("interactive television program guide") implemented via the CPU 501

of the user terminal 101 generates a request/command that communicates information to the video server 401 specifying which program the user wishes to retrieve ("retrieval request"). Ex. 1003, ¶¶ [0038]-[0039], [0044]-[0045]; Ex. 1011, ¶ 198. Additionally, Yamada discloses that "the video server 401 sends out the designated video information … to the information terminal 101, based on the communicated information" sent from the CPU and the information terminal. Ex. 1003, ¶¶ [0038], [0045]; *id.,* ¶¶ [0016], [0020], [0034], [0044]. Yamada thus discloses retrieving the program with the remote media server (the video server sending out the designated video information) in response to the retrieval request (the request/command communicated from the information terminal to the video server specifying which program the user wishes to retrieve). Ex. 1011, ¶ 198.

As explained in Section IV.A.1.v.a, it would have been obvious to incorporate Yamada's program retrieval and local storage features into Lawler's interactive station controller. Ex. 1011, ¶¶ 175-196. In particular, Yamada's program request and retrieval techniques provide express means for accomplishing Lawler's discussion of "access[ing] the head end, on demand, to retrieve and view the recorded program." Ex. 1002 at 2:24-29, 4:30-32, 13:26-33; Ex. 1003, ¶¶ [0025], [0027], [0038]. Ex. 1011, ¶¶ 180-182, 184-186, 188-192, 195.

Thus, Lawler-Yamada teaches the limitations recited in [1G]. Ex. 1011, ¶ 198.

d. **[1H]: storing the retrieved program on user television equipment for later play back.**

Lawler discloses that users may access/retrieve programs stored at the media servers 32 (Ex. 1002 at 4:23-25, 4:30-32, 13:30-35), and further, that the head end 12 supplies such video programming to the viewer station 16 (the "user television equipment") for display to a user via the video display 20. Ex. 1002 at 2:27-29, 3:30-36, 3:39-41, 4:23-25, 5:39-43, 5:49-56, 5:57-67, 6:7-24, Fig. 2.

Lawler discloses that viewer station 16 comprises a recording device 23 to record programs (Ex. 1002 at 3:36-39, 5:38-44, 6:28-32, 10:53-56; 13:20-25, Fig. 2; Ex. 1011, ¶¶ 182, 189, 194, 198) and a memory system 60 for storing information (Ex. 1002 at 7:24-27, 9:63-65, Fig. 2; Ex. 1011, ¶¶ 182, 189, 194, 198). Additionally, in order for a program to be displayed at Lawler's viewer station (Ex. 1002 at 2:26-28, 13:32-33), the program or at least a portion of the program must be stored at the viewer station at least temporarily. Ex. 1011, ¶ 151. But, to the extent Lawler arguably fails to disclose [1H], Yamada does.

Yamada recognizes that, although "it is possible to construct a system in which users can enjoy their favorite picture whenever they desire" by sending video information from a video server to a user terminal, "there still seems to be a desire to keep the video information…as a personal library" at the user terminal. Ex. 1003, ¶ [0040]. Yamada also recognizes that in systems that play back programs from a remote server, it may be "necessary to keep a buffer to store video information in

the information terminal or hub in order to reduce the load on the video server." *Id.*, ¶¶ [0040], [0044]. To address this need, Yamada proposes "providing a storage device at the information terminal," thereby enabling users to develop a personal library of stored video programs. *Id.*, ¶ [0040].

In particular, Yamada discloses that the information terminal 101 ("user television equipment") comprises a storage device 520, which "has a function of recording video information and the like on the storage medium 521 and playing back it [*sic*] as necessary." Ex. 1003, ¶ [0041]; *see also id.*, ¶¶ [0018], [0019], [0025], [0029], [0037], [0040]-[0041], [0044]-[0045], [0053], Figs. 5, 15. Thus, after a user specifies a desired video program, "the video server 410 sends out the designated video information … to the information terminal 101" based on the user's request, and "[t]he information terminal 101 selects the video information … and records it in the storage medium 521 on the storage device 520" ("storing the retrieved program on user television equipment"). Ex. 1003, ¶¶ [0044]-[0045]. Yamada also discloses that users may play back and view the stored video program at any time (the claimed "later play back"). *Id.*, ¶ [0045].

As explained in Section IV.A.1.v.a, it would have been obvious to incorporate Yamada's program retrieval and local storage features into Lawler's interactive station controller. Ex. 1011, ¶¶ 175-196. A PHOSITA would have recognized that enabling Lawler's interactive station controller to store media content from a remote

server to a user device having local storage would have yielded predictable results and resulted in an improved system. Ex. 1011, ¶¶ 180, 182-183, 187-189, 193-195. A PHOSITA would have applied the function of storing media content from a remote server on a user device (as taught by Yamada) to Lawler's interactive station controller to obtain the predictable result of providing local storage that may be used to form a personal library of media content previously recorded by Lawler's media servers 32. Ex. 1003, ¶¶ [0016], [0019]-[0020], [0022], [0029], [0038], [0044]-[0045], [0049], [0053]; Ex. 1011, ¶¶ 188, 193, 195.

Thus, Lawler-Yamada teaches the limitations recited in [1H]. Ex. 1011, ¶ 198.

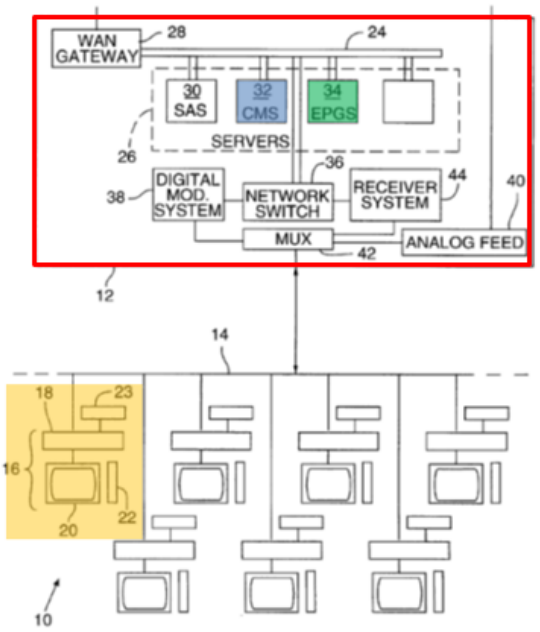
2. Independent Claim 5

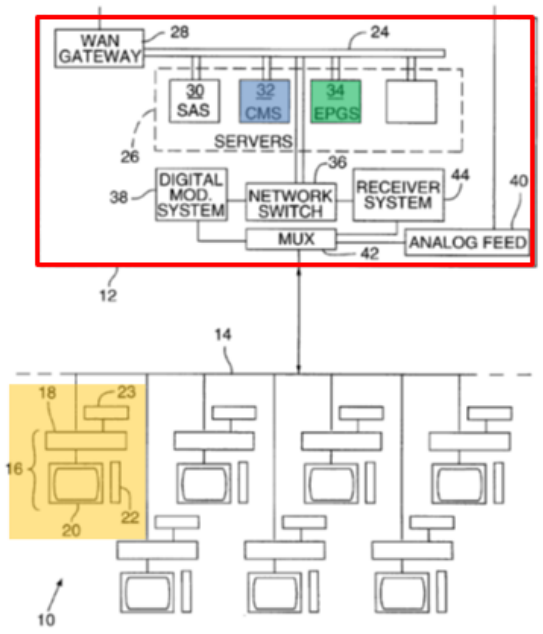
Independent claim 5 is a system claim counterpart to method claim 1. Except as explained below, claim 5 is very similar to claim 1. Lawler-Yamada renders claim 5 obvious for reasons substantially similar to those for claim 1. Ex. 1011, ¶¶ 199-203. The motivations to combine Lawler and Yamada are the same as discussed in Sections IV.A.1.v.a-d.

The below chart shows claim 5 in mark-up form relative to claim 1.

	CLAIM LANGUAGE	COMPARISON & ANALYSIS
[5A]	An ~~method for use in an~~ interactive television program guide system in which	Claim 5 recites a system instead of the method of claim 1. *See* Section IV.A.1.i; Ex. 1011, ¶ 200.

	CLAIM LANGUAGE	COMPARISON & ANALYSIS
	television programs are recorded and retrieved ~~played back~~ on-demand ~~by a remote media server~~ for a number of users, the system ~~method~~ comprising:	
[5B]	a remote media server configured to store and retrieve programs on-demand for each user;	As shown below in Figure 1 (annotated), Lawler's viewing system 10 includes a central head end 12 (**red**) comprising "continuous media servers 32" (**blue**) that "provide storage and ondemand or near on-demand delivery of digitized video information" (Ex. 1002 at 4:53-25) and are "used to store programs recorded at the head end in response to a record tag." Ex. 1002 at 4:28-34, Fig. 1; Ex. 1011, ¶ 202; see Ex. 1002 at 2:23-28, 10:55-57, 12:29-30, 12:58-61, 13:27-37.

	CLAIM LANGUAGE	COMPARISON & ANALYSIS
		FIG. 1  Thus, Lawler's media servers 32 teach the claimed "remote media server," as recited in [5B]. *Id*.
[5C]	<u>distribution equipment configured to distribute to each user programs that are retrieved on-demand by the remote media server; and</u>	As explained above concerning [5B], viewing system 10 includes media servers 32 that retrieve and distribute programs on-demand for each user. *See* Section IV.A.2, [5B]; Ex. 1002 at 4:28-34, 13:27-37. As shown below in Figure 1 (annotated), Lawler's viewing system 10 includes "a central head end 12 [**red**] that supplies programming over a network 14 to multiple viewer stations 16…" (Ex. 1002 at 3:31-34, 3:39-41, 5:21-26; *see also* Ex. 5:29-31, 5:57-62, 6:9-24, 7:23-27), thereby enabling "[u]sers [to] access the head end, on demand, to retrieve and

	CLAIM LANGUAGE	COMPARISON & ANALYSIS
		view [a] recorded program." Ex. 1002 at 13:32-37. FIG. 1  Additionally, as shown in Figure 1 above (annotated), the head 12 includes electronic program guide data servers 34 (**green**) that store program schedule information (Ex. 1002 at 4:35-50, 9:52-58) and distribute this information to user viewing stations and interactive station controllers. Ex. 1002 at 9:63-66, 10:4-8, Fig. 4A. Thus, Lawler's head end 12 discloses the claimed "distribution equipment", as recited in claim [5C]. *Id.*; Ex. 1011, ¶¶ 201-202; *see* Ex. 1001 at 2:66-3:3, 6:45-61, 7:14-16.

	CLAIM LANGUAGE	COMPARISON & ANALYSIS
[5D]	interactive program guide television equipment on which an interactive television program guide is implemented, wherein the interactive television program guide is configured to:	[5D] recites an "interactive television program guide" that "is configured to" perform the steps of [5E] and [5F]. [1C] and [1F] are similar to [5D], and recite that the claimed "record request" and "retrieval request" (respectively) are generated by the interactive television program guide. *See* Sections IV.A.1.iii and IV.A.2.vi; Ex. 1011, ¶ 202.
[5E]	~~generating~~ generate a record request in response to a user indicating a desire to record a program on-demand with the remote media server,	[5E] (in conjunction with [5D]) is virtually identical to [1B] and [1C] and is taught for the same reasons described in [1B] and [1C]. *See* Section IV.A.1.ii-iii.
[5F]	~~generating~~ generate a retrieval request in response to a user request	[5F] (in conjunction with [5D]) is virtually identical to [1E] and [1F] and is taught for the same reasons described in [1E] and [1F]. *See* Section IV.A.1.v-vi.
[5G]	wherein the remote media server is further configured to: ~~recording~~ record the program ~~with the remote media server~~ in response to the record request generated by the interactive television program guide; and	[5G] is substantially similar to [1C] and [1D] and is taught for the same reasons described in [1C] and [1D]. *See* Sections IV.A.1.iii and IV.A.1.iv.

	CLAIM LANGUAGE	COMPARISON & ANALYSIS
[5H]	~~retrieving~~ retrieve the program ~~with the remote media server~~ in response to the retrieval request; and	[5H] is substantially similar to [1G] and is taught for the same reasons described in [1G]. *See* Section IV.A.1.v.c.
[5I]	the interactive television program guide is further configured to ~~storing~~ store the retrieved program ~~on user television equipment~~ for later play-back.	[5I] is substantially similar to [1H]. *See* Section IV.A.1.v.d. While [5I] sets forth "the interactive television program guide" whereas [1H] sets forth "user television equipment," the '978 describes that "[t]he interactive television program guide may run totally on user television equipment 22." Ex. 1001 at 6:37-38. Accordingly, [5I] merely sets forth software being implemented by hardware set forth in [1H] and is taught for the same reasons described in [1H]. Ex. 1011, ¶ 202.

B. Ground B: Obviousness of Claims 2-3 and 6-7 in View of Lawler, Yamada, and Ang

1. Claims 2 and 6

Claims 1 and 5 are taught by Lawler and Yamada. Sections IV.A.1-IV.A.2, *supra*. Claim 2 depends from claim 1 and requires "retrieving the program as at least one file." Ex. 1001, claim 2. Claim 6 depends from claim 5 and requires the distribution equipment to "retrieve programs from the remote media server; and distribute the programs to each user as at least one file." Ex. 1001, claim 6; Ex. 1011, ¶ 204.

The ’978 patent discloses the following with respect to retrieving programs as at least one file: “[r]emote media server 24 retrieves the requested program from storage 15 and provides it to distribution equipment 21 for distribution as a suitable *video signal* (e.g., NTSC video, MPEG-2, etc.).” Ex. 1001 at 25:33-36 (emphasis added); *see also id.,* 13:8-12. The ’978 patent describes retrieval in terms of *what* is retrieved (*e.g.*, files), and *how* the retrieval is performed (*e.g.*, via data streams). *See* Ex. 1001 at 9:29-32; Ex. 1011, ¶ 205. Accordingly, “retrieving the program as at least one file” and “retrieving the program in one or more digital data streams” are not mutually exclusive limitations. Ex. 1011, ¶ 205.

Lawler discloses that the media servers 32 of the head end 12 “provide storage and ondemand [*sic*] or near on-demand delivery of digitized video information” and the “head end 12 [the claimed ‘distribution equipment’]…supplies programming over a network 14 to multiple viewer stations 16.” Ex. 1002 at 3:28-34; *see also id.* at 4:23-66, 5:57-65, 6:19-24, 9:63-66, 13:30-35, Fig. 1. Lawler also discloses that various types of digitized video information may be retrieved and distributed by the headend including digital video signals (*e.g.*, MPEG1 or MPEG2). Ex. 1002 at 3:58-67, 4:25-28. Both Lawler and the ’978 patent identify MPEG-2 format (and Lawler additionally identifies MPEG-1 format) for the retrieval and distribution of video information/signals. A PHOSITA would have understood the references to MPEG-

1 or MPEG-2 as being synonymous with a data file in MPEG-1 or MPEG-2 format (*e.g.*, a digital file with a .mpg extension). Ex. 1011, ¶¶ 206, 237.

In view of the foregoing, Lawler discloses servers 32 that store digital video information as files, and further that the head end 12 retrieves this video information as files from the servers 32 to distribute programs to viewer stations. Ex. 1011, ¶¶ 207, 237. However, to the extent Patent Owner contends that Lawler does not disclose the limitations in claim 2, Ang does.

Ang discloses a video server that is "used for the storage and delivery of video streams to the client terminals. The video server's database also contains information of the recording requests and the locations of the *video files*." Ex. 1006 at 6 (emphasis added); *see also id.* at 44. Ang discloses that video files may be retrieved "from the video server database," over a network. Ex. 1006 at 11; *see also id.* at 42, 43, 48, 50, 51, Fig. 2.

It would have been obvious to a PHOSITA to modify head end 12 of Lawler-Yamada to retrieve and distribute programs (*e.g.*, from media servers 32) as at least one file, as taught by Ang. Such a modification would be merely using a known technique (retrieving and distributing programs as files) to improve similar devices in the same way. Ex. 1011, ¶¶ 211-213. The device to be improved is Lawler's head end 12, which retrieves and distributes recorded programs from media servers 32. Ex. 1002 at 3:39-44, 3:61-4:10, 4:23-34, 5:29-36, 5:57-6:27, 13:8-37, 13:60-65.

Ang discloses a video server and a VCR server comparable to the media servers 32 at the Lawler-Yamada head end 12 (*e.g.*, both the media servers 32 of Lawler-Yamada and the VCR server of Ang receive record requests based on a client request (Ex. 1002 at 3:15-21, 4:23-34, 10:65-11:6, 12:29-13:47; Ex. 1006 at 43-48, Fig. 3), both record and store programs remotely at the server (Ex. 1002 at 4:23-34, 13:26-37; Ex. 1006 at 43, 45, 46, 48 Fig. 3), and both retrieve recorded programs for distribution to client terminals (Ex. 1002 at 2: 2:27-29, 4:23-25, 4:30-32, 13:30-35; Ex. 1006 at 41-43, 45-48, 51, Fig. 3). Ex. 1011, ¶ 212. A PHOSITA would have been motivated to apply the known technique of retrieving and distributing programs as files (as taught by Ang) in the same way to Lawler's head end 12, and the results would have been predictable—*e.g.*, distribution equipment configured to retrieve and distribute programs from the remote media server as at least one file. Ex. 1011, ¶ 212. This application would have improved the Lawler-Yamada system by enabling the retrieval and distribution of programs in a convenient way that flexibly enables communication with various devices. Ex. 1011, ¶ 213.

Additionally, incorporating Ang's teachings in Lawler-Yamada would have been nothing more than combining prior art elements (the Lawler-Yamada retrieval and distribution of programs, and Ang's retrieval and distribution of programs as files) according to known methods (modifying software to retrieve and distribute programs in a file format (*e.g.*, MPEG-1)) to yield predictable results (retrieval and

distribution of programs as digital files). Ex. 1011, ¶¶ 214-219. A PHOSITA would have had the skills, knowledge, and motivation to carry out the combination. Ex. 1011, ¶¶ 220-222. A PHOSITA would have readily modified (to the extent it was not already being done) software for Lawler-Yamada's head end 12 and media servers 32 (Ex. 1002 at 4:6-7, 4:51-53, 13:15-30) to retrieve and distribute a program as at least one file (*e.g.*, MPEG-1 files) because, as set forth above, such a modification would have improved the Lawler-Yamada system. Ex. 1011, ¶ 220.

Accordingly, Lawler-Yamada-Ang teaches the limitations of claims 2 and 6 and renders claims 2 and 6 obvious. Ex. 1011, ¶¶ 223-224, 238-240.

2. Claims 3 and 7

Claims 1 and 5 are taught by Lawler and Yamada. Sections IV.A.1-IV.A.2, *supra*. Claim 3 depends from claim 1 and requires "retrieving the program in one or more digital data streams." Ex. 1001, claim 3. Claim 7 depends from claim 5 and requires the distribution equipment to "retrieve programs from the remote media server; and distribute the programs to each user in one or more digital data streams." Ex. 1001, claim 7.

The '978 patent describes that program retrieval is performed via digital data streams. For example, the '978 patent describes that "processing circuitry passes the MPEG-2 files to distribution equipment 21 for distribution to users as an MPEG-2 data stream," and "an MPEG-2 data stream or series of files may be received from

distribution equipment 21." Ex. 1001 at 9:29-32, 14:30-31. As noted above, "retrieving the program as at least one file" and "retrieving the program in one or more digital data streams" are not mutually exclusive limitations. Ex. 1011, ¶ 205.

As explained above concerning claims 2 and 6, Lawler discloses that the head end 12 ("distribution equipment") retrieves programs from the media servers 32 ("remote media server"). *See* Section IV.B.1; *see also* Ex. 1002 at 3:28-34, 4:23-33, Fig. 1, 4:60-66, 5:57-65, 6:19-24, 13:30-35. Further, Lawler discloses that various types of digitized video information may be retrieved and provided by the headend to the viewer station including full-length motion pictures and "digital *video signals* (e.g., MPEG1 or MPEG2)." Ex. 1002 at 3:65-66 (emphasis added); *see also id.,* 3:58-67, 4:25-28. Both Lawler and the '978 patent identify MPEG-2 format (and Lawler additionally identifies MPEG-1 format) for the retrieval and distribution of video signals. A PHOSITA would have recognized that MPEG-1 or MPEG-2 digital video signals, as described by Lawler, are transmitted as digital data streams. Ex. 1011, ¶ 241.

Thus, Lawler discloses that head end 12 retrieves and distributes the programs to viewer station 16 as one or more digital data streams (*e.g.*, a series of MPEG1 or MPEG2 files). *Id.*; *compare* Ex. 1001 at 11:39-42, 13:8-12. To the extent the Patent Owner contends that Lawler does not disclose the limitations of claims 3 and 7, Ang does.

Ang discloses a video server that is "used for the storage and delivery of *video streams* to the client terminals." Ex. 1006 at 46 (emphasis added); *see also id.* at 41-42, 45, 47, 50-51, Fig. 3. Ang discloses that "[t]he output data from the MPEG-1 encoder can be of several types: video only, audio only or *MPEG-1 system stream* with interleaved video and audio data," (Ex. 1006 at 45 (emphasis added)) and "is then stored in a suitable directory on the video server for subsequent retrieval." *Id.* at 6. Ang further discloses that each "connection should be able to support about 30-40 streams." Ex. 1006 at 51; Ex. 1011, ¶ 241.

A PHOSITA would have found it obvious to modify the head end 12 of Lawler-Yamada to retrieve and distribute programs (*e.g.*, from the media servers 32) in one or more digital data streams. Such a modification would merely have been using a known technique (retrieving and distributing programs in digital data streams) to improve similar devices in the same way. Ex. 1011, ¶¶ 225-226. The device to be improved is Lawler's head end 12 which retrieves and distributes recorded programs from media servers 32. Ex. 1002 at 3:39-43, 3:61-4:10, 4:23-34, 5:29-6:27, 13:8-37, 13:60-65; Ex. 1011, ¶ 225. Ang discloses a video server and a VCR server comparable to the media servers 32 at the Lawler-Yamada head end 12. Ex. 1011, ¶¶ 210, 225. For example, both the media servers 32 of Lawler-Yamada and the VCR server of Ang receive record requests based on a client request (Ex. 1002 at 3:15-21, 4:23-34, 10:65-11:6, 12:29-13:47; Ex. 1006 at 43, 45, 46, 48, Fig.

3), both record and store programs remotely at the server (Ex. 1002 at 4:23-34, 13:26-37; Ex. 1006 at 43, 45, 46, 48, Fig. 3), and both retrieve recorded programs for distribution to client terminals (Ex. 1002 at 2: 2:27-29, 4:23-32, 13:30-35; Ex. 1006 at 41-48, 51, Fig. 3).

A PHOSITA would have applied the known technique of retrieving and distributing programs in one or more digital data streams (as taught by Ang) in the same way to Lawler's head end 12 and the results would have been predictable—*e.g.*, distribution equipment configured to retrieve and distribute programs from the remote media server in one or more digital data streams. Ex. 1011, ¶ 225. This application would have improved the Lawler-Yamada system by enabling the retrieval and distribution of programs in a convenient way that flexibly enables communication with various devices. Ex. 1011, ¶ 226.

Additionally, incorporating Ang's teachings in Lawler-Yamada would be nothing more than combining prior art elements (the Lawler-Yamada media server 32, and Ang's MPEG-1 encoder for distributing programs in data streams) according to known methods (modifying software to retrieve and distribute programs in digital data streams (*e.g.*, MPEG-1 stream)) to yield predictable results (retrieval and distribution of programs in one or more digital data streams). Ex. 1011, ¶¶ 227-235. A PHOSITA would have had the skills, knowledge, and motivation to carry out the combination. Ex. 1011, ¶ 233. A PHOSITA would have readily modified Lawler-

Yamada's head end 12 and media servers 32 (Ex. 1002 at 4:6-7, 4:51-53, 13:15-30) to retrieve and distribute a program in one or more digital data streams (*e.g.*, MPEG-1 streams) because, as set forth above, such a modification would have improved the Lawler-Yamada system. Ex. 1011, ¶ 234.

Accordingly, Lawler-Yamada-Ang teaches this limitation and renders claims 3 and 7 obvious. Ex. 1011, ¶¶ 235-236, 241-243.

C. Ground C: Obviousness of Claims 4 and 8 in View of Lawler, Yamada, and Mankovitz

Claims 1 and 5 are taught by Lawler and Yamada. *See* Sections IV.A.1-IV.A.2. Claim 4 depends from claim 1 and requires "storing program guide data associated with the retrieved program; and presenting to the user the program guide data as if the retrieved program were being originally aired." Claim 8 depends from claim 5 and requires "the remote media server [be] configured to store program guide data associated with a program stored by the remote media server;" and that "the interactive television program guide [be] configured to present to the user the program guide data on the interactive program guide television equipment as if the associated program were being originally aired." Claim 8 requires virtually identical features as those in claim 4. Ex. 1011, ¶ 271.

These steps were generally known in the art and taught by Lawler and Mankovitz. The combination of Lawler-Yamada with Mankovitz renders claims 4 and 8 obvious. Ex. 1011, ¶¶ 244-274.

The phrase "present[ing] to the user the program guide data…as if the [retrieved/associated] program were being originally aired" is construed above in Section III.B.4. Lawler shows that it was known, at the time of the alleged inventions of the '978 patent, to store program guide data associated with a program stored/recorded by and retrieved from the remote media server, as recited in claims [4A] and [8A]. Ex. 1002 at 4:35-45, 9:55-57; Ex. 1011 ¶ 245. Like the '978 patent, Lawler discloses that "[t]he electronic program guide data server 34 stores program schedule information … such as, a brief description of the program, the stars of the program, a link to a video preview (stored on the continuous media server 32) for the program, whether the program is closed captioned, whether the program is stereo or a variety of other information." Ex. 1002 at 4:35-45; *see* Ex. 1001 at 20:64, 23:54-56; 31:30-34; Ex. 1011 ¶ 245. As disclosed by Lawler, electronic program guide data server 34 is one of many servers 26 located at the head end 12. Ex. 1002 at 4:1-10.

To the extent Patent Owner argues that the remote media server that records programs has to be *the same server* (not one of many remote media servers 26) that stores program guide data (which is inconsistent with the '978 disclosure—*see, e.g.*, Ex. 1001 at 15:20-21, 17:64-66, 23:64-67, Figs. 2b, 2d), Lawler discloses that "various functions of the servers described here may be combined so as to be carried

out by a single server" (Ex. 1002 at 4:54-57), such that media servers 32 may further include the functionality of program guide data server 34. Ex. 1011, ¶¶ 254, 272.

To the extent Lawler fails to disclose the limitations recited in [4B] and [8B], Mankovitz does. Ex. 1011, ¶¶ 270-271, 274. Mankovitz shows that it was known to present to the user program guide data on the interactive program guide television equipment as if the associated program were being originally aired. Ex. 1008 at 5:41-58, 9:65-10:2, 10:30-43, Fig. 1; Ex. 1011, ¶ 270. Mankovitz discloses that "[f]or each program recorded on the cassette tape, a corresponding entry 1041 is set up" that includes program titles, locations, lengths, types, audience, and speed. Ex. 1008 at 5:41-58; Ex. 1011, ¶¶ 247, 258, 270. Like the "'INFO' key on remote control 40" (Ex. 1001 at 24:58-63) as described in the '978 patent, Mankovitz discloses that a "program identification (PGM ID) button 9724 is used to display the program title and other information of the program being viewed either direct from cable or airwaves or from tape." Ex. 1008 at 9:65-10:2. Thus, Mankovitz describes that during playback of a recorded program, a program title and other information, which was stored when recording the original airing of the program, may be presented to a user for use—based on a program identification button—on the interactive program guide television equipment as if the user were viewing the recorded program when it was originally aired. Ex. 1011, ¶ 270; *see* Section III.B.4.

A PHOSITA would have found it obvious to modify the Lawler-Yamada interactive station controller to present to the user program guide data on the user television equipment as if the associated program were being originally aired. This modification would have been nothing more than combining prior art elements (Lawler-Yamada's interactive station controller, and Mankovitz's directory controller that presents program guide data), according to known methods (a simple modification to display program related information for recorded programs just like for originally aired programs) to yield predictable results (a recording system that allows users to interact with recorded programs and receive program information just like during original airing of the programs). Ex. 1011, ¶¶ 254-261. A PHOSITA would have had the skills, knowledge, and motivation to carry out the combination. *Id*., ¶¶ 254-261, 266. A PHOSITA would have readily modified (to the extent it was not already being done) button mappings or software for Lawler-Yamada's input device or interactive station controller (*e.g*., IPG software) to present—via Lawler's program guide—program guide data associated with a recorded program during playback of the program. Ex. 1001 at 15:67-16:13, 19:49-52; Ex. 1011, ¶¶ 258, 266.

Additionally, incorporating Mankovitz's teachings in Lawler-Yamada would be merely applying a known technique to a known device ready for improvement to yield predictable results. Ex. 1011, ¶¶ 262-265. The device to be improved is Lawler's interactive station controller, which retrieves recorded programs and

program schedule information, and controls the display of such information. Ex. 1002 at 2:26-28, 5:49-6:27, 7:15-27, 9:63-66, 10:4-7, 13:32-33; Ex. 1011, ¶ 262. A useful improvement to Lawler-Yamada's interactive viewer station would be readily provided by the display of program related information for recorded programs, as taught by Mankovitz. Ex. 1011, ¶¶ 263-264. Lawler-Yamada and Mankovitz disclose comparable devices and components (*see e.g.,* Lawler's demodulator 52—which Lawler describes as functioning as a tuner, Ex. 1002 at 5:63-65), Mankovitz's tuner 61; Lawler's memory 60, Mankovitz's RAM 33; Lawler's station controller 18, Mankovitz's controller 30 and microprocessor controller 31; Lawler's recording device 23—which Lawler describes can be a VCR, Mankovitz's VCR 1; Lawler's recorder control subsystem 65, Mankovitz's VCR control logic 21; Lawler's display 20, Mankovitz's display 50, Lawler's input device 22, Mankovitz's remote 75). Ex. 1002 at 6:7-13, 6:50-7:3, 10:56-58, 13:8-42, Figs. 1-2; Ex. 1008 at 2:45-4:27, Fig. 1; Ex. 1011, ¶ 263. Combining Lawler-Yamada and Mankovitz would also yield a predictable result—an interactive station controller that allows users to display program related information during playback of recorded programs by pressing a button on user input device 22. Ex. 1011, ¶ 265.

Accordingly, the combination of Lawler-Yamada and Mankovitz teaches these limitations and renders claims 4 and 8 obvious. Ex. 1011, ¶¶ 267-268, 270-274.

V. CONCLUSION

Inter partes review of claims 1-8 should be instituted and the claims cancelled.

BANNER & WITCOFF, LTD.

Dated: July 31, 2019

By: / Frederic M. Meeker /

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CERTIFICATION UNDER 37 CFR § 42.24(D)

Under the provisions of 37 CFR § 42.24(d), the undersigned hereby certifies that the word count for the foregoing Petition for Inter Partes Review totals 13,975, as counted by the Word Count feature of Microsoft Word, which is less than the 14,000 allowed under 37 CFR § 42.24(a)(1)(i).

Pursuant to 37 C.F.R. § 42.24(a)(1), this count does not include the table of contents, the table of authorities, mandatory notices under § 42.8, the certificate of service, this certification of word count, the claims listing appendix, or appendix of exhibits.

Dated: July 31, 2019

By: / Frederic M. Meeker /

Frederic M. Meeker
Reg. No. 35,282

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.105, I hereby certify that I caused a true and correct copy of the Petition for *Inter Partes* Review in connection with U.S. Patent No. 7,873,978 and supporting evidence to be served via FedEx Priority Overnight on July 31, 2019, on the following:

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Dated: July 31, 2019

By: /Frederic M. Meeker/

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CLAIM LISTING APPENDIX

U.S. Patent No. 7,873,978 to Ellis *et al.*	
Claim Element Designation	**Claim Element**
Claim 1	
[A]	A method for use in an interactive television program guide system in which television programs are recorded and played back on-demand by a remote media server for a number of users, the method comprising:
[B]	generating a record request in response to a user indicating a desire to record a program on-demand with the remote media server,
[C]	wherein the record request is generated by an interactive television program guide;
[D]	recording the program with the remote media server in response to the record request;
[E]	generating a retrieval request in response to a user request,
[F]	wherein the retrieval request is generated by the interactive television program guide;
[G]	retrieving the program with the remote media server in response to the retrieval request; and
[H]	storing the retrieved program on user television equipment for later play back.
Claim 2	
2.	The method of claim 1 further comprising retrieving the program as at least one file.
Claim 3	

3.	The method of claim 1 further comprising retrieving the program in one or more digital data streams.
Claim 4	
[A]	The method of claim **1** further comprising: storing program guide data associated with the retrieved program; and
[B]	presenting to the user the program guide data as if the retrieved program were being originally aired.
Claim 5	
[A]	An interactive television program guide system in which television programs are recorded and retrieved on-demand for a number of users, the system comprising:
[B]	a remote media server configured to store and retrieve programs on-demand for each user;
[C]	distribution equipment configured to distribute to each user programs that are retrieved on-demand by the remote media server; and
[D]	interactive program guide television equipment on which an interactive television program guide is implemented, wherein the interactive television program guide is configured to:
[E]	generate a record request in response to a user indicating a desire to record a program on-demand with the remote media server; and
[F]	generate a retrieval request in response to a user request wherein the remote media server is further configured to:
[G]	record the program in response to the record request generated by the interactive television program guide; and

[H]	retrieve the program in response to the retrieval request; and
[I]	the interactive television program guide is further configured to store the retrieved program for later playback.
Claim 6	
[A]	The system defined in claim 5 wherein the distribution equipment is configured to: retrieve programs from the remote media server; and
[B]	distribute the programs to each user as at least one file.
Claim 7	
[A]	The system defined in claim 5**,** wherein the distribution equipment is configured to: retrieve programs from the remote media server; and
[B]	distribute the programs to each user in one or more digital data streams.
Claim 8	
[A]	The system defined in claim 5**,** wherein: the remote media server is further configured to store program guide data associated with a program stored by the remote media server; and
[B]	the interactive television program guide is further configured to present to the user the program guide data on the interactive program guide television equipment as if the associated program were being originally aired.