

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD**

SAMSUNG ELECTRONICS CO., LTD. AND
SAMSUNG ELECTRONICS AMERICA, INC.

Petitioners,

v.

MAXELL LTD.,
Patent Owner

Case: IPR2025-01311

U.S. Patent No. 11,812,091

PATENT OWNER RESPONSE

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Patent Trial and Appeal Board
U.S. Patent and Trademark Office
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Table of Contents

I. INTRODUCTION.....	1
II. BACKGROUND	3
A. The '091 Patent	3
B. Prosecution History	9
C. Summary of the Grounds	13
III. CLAIM CONSTRUCTION	13
IV. PERSON OF ORDINARY SKILL IN THE ART.....	14
V. DR. BEDERSON'S DECLARATION LACKS INDEPENDENT TECHNICAL ANALYSIS.....	15
VI. GROUND 1: CLAIMS 1, 3–5, 7, 11–15, 17, AND 20 ARE NOT OBVIOUS OVER PHILLIPS IN VIEW OF WALLIS	18
A. There Is No Motivation to Combine Phillips with Wallis	18
B. The Prior Art Does Not Disclose the Claimed Architecture.....	22
C. Limitation [1e]: Phillips Does Not Disclose “Alternatively Displayed” Operation Panels Together with Reproduced Digital Contents.....	24
D. Limitation [1f]: Phillips Does Not Disclose “Time Related Information” ..	27
E. Limitation [1g]: Wallis Does Not Disclose “Panel Related Information” ...	31
F. Limitations [1i] and [1j]: Dr. Bederson Constructs an Unsupported Scenario	36
G. Claim 14	39
VII. GROUND 2: CLAIMS 1, 3–5, 7, 11–15, 17, AND 20 ARE NOT OBVIOUS OVER PHILLIPS IN VIEW OF WALLIS AND LOGAN	40
VIII. GROUND 3: CLAIMS 2, 6, 10, AND 16 ARE NOT OBVIOUS OVER PHILLIPS–WALLIS COMBINATIONS IN VIEW OF UCHIDA.....	43
IX. GROUND 4: CLAIMS 8, 9, 18, AND 19 ARE NOT OBVIOUS OVER GROUND 1 AND ELLIS	48
X. GROUND 5: CLAIMS 8, 9, 18, AND 19 ARE NOT OBVIOUS OVER GROUND 2 AND ELLIS	52
XI. GROUND 6: CLAIMS 1–3, 6–9, AND 14–19 ARE NOT OBVIOUS OVER ELLIS '430 IN VIEW OF WALLIS	54

A. No Motivation to Combine	55
B. Ellis '430 Does Not Disclose a “Controller”	58
C. Limitations [1e] Through [1j].....	59
D. Claim 14	62
XII. CONCLUSION	62

PATENT OWNER’S EXHIBIT LIST

Description	Exhibit #
Notice Letter to Samsung (July 7, 2021)	2001
Follow-up Notice Letter to Samsung (December 29, 2021)	2002
Docket Navigator Time to Trial Statistics for the Eastern District of Texas	2003
Docket Control Order, <i>Maxell, Ltd. v. Samsung Elecs. Co., Ltd.</i> , No. 5:25-cv-00052-RWS (E.D. Tex.)	2004
Jury Trial Transcript, Vol. 4, <i>Maxell, Ltd. v. Samsung Elecs. Co., Ltd.</i> , No. 5:23-cv-00092-RWS (E.D. Tex.)	2005
Complaint, <i>Maxell, Ltd. v. Samsung Elecs. Co., Ltd.</i> , No. 5:25-cv-00052-RWS (E.D. Tex.)	2006
Follow-up Notice Letter to Samsung (September 8, 2023)	2007
Law360 Article, “Maxell Settles Patent Suit Against Apple Over Mobile Tech”	2008
Law360 Article, “Maxell Scores \$43M EDTX Jury Win In ZTE Patent Trial”	2009
Law360 Article, “Maxell, Huawei Reach Terms To End Smartphone Patent Suit”	2010
Hudson Institute Article, “Google’s Loss to Sonos Settles It, Big Tech Has an IP Piracy Problem”	2011
PatentRenewal.com Article, “which-companies-hold-the-most-patents-in-the-world”	2012
Motion for Partial Summary Judgment of Validity Based on Sotera Stipulations, <i>Maxell, Ltd. v. Samsung Elecs. Co., Ltd.</i> , No. 5:23-cv-00092-RWS (E.D. Tex.)	2013
Follow-up Notice Letter to Samsung (November 28, 2024)	2014
Petitioner’s Invalidity Contentions (November 28, 2025)	2015
US Patent Application Publication No. US 2008/0184297	2016
Defendants’ PR 4-2 Disclosures	2017
Declaration of Tariq Javed in Support of Motion for <i>Pro Hac Vice</i> Admission	2018

IPR2025-01311

Patent No. 11,812,091

Patent Owner Response

Declaration of Karansher Singh in Support of Patent Owner's Response	2019
Curriculum Vitae of Karansher Singh	2020
Client/Server Software Architectures—An Overview, Software Engineering Institute, Carnegie Mellon University	2021
CBS News, “Feature Fatigue Hits Gadget Users”	2022
Transcript of Deposition of Dr. Benjamin B. Bederson	2023

Patent Owner Maxell Ltd. (“Patent Owner”) respectfully submits this Patent Owner Response to the Petition for Inter Partes Review filed by Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (collectively, “Petitioner” or “Samsung”), challenging claims 1–20 of U.S. Patent No. 11,812,091 (“the ’091 Patent”). For the reasons set forth below, Petitioner has failed to carry its burden of proving by a preponderance of the evidence that any challenged claim is unpatentable. Institution should not have been granted, and the Board should enter a final written decision confirming the patentability of all challenged claims. Moreover, as set forth below, Petitioner’s reliance on expert testimony and general knowledge to supply missing claim limitations is inconsistent with the USPTO’s July 31, 2025 Memorandum enforcing 37 C.F.R. § 42.104(b)(4), which requires that a petition “must specify where each element of the claim is found in the prior art patents or printed publications relied upon.”

I. INTRODUCTION

The ’091 Patent claims a specific and innovative architecture for managing the display of user operation panels on a digital content reproducing apparatus: a controller that receives “related information” from an outside server, including both “time related information” and “panel related information,” and uses that server-delivered information to alternatively display either a linear operation panel or an

interactive operation panel together with the reproduced digital contents. This related information-driven, server-informed panel-switching architecture was the basis for the Examiner's allowance of all twenty claims.

Petitioner challenges all twenty claims across six grounds, each asserting obviousness under 35 U.S.C. § 103 based on various combinations of Phillips (EX1010), Wallis (EX1011), Logan (EX1013), Ellis (EX1014), Uchida (EX1015), and Ellis '430 (EX1021). None of these grounds establishes that the prior art discloses or renders obvious the central innovation of the '091 Patent. As explained by Dr. Karansher Singh in his supporting declaration ("EX2019"), the prior art references do not, individually or in combination, teach the claimed controller architecture in which server-delivered related information governs the alternative display of linear and interactive operation panels with the reproduced digital contents.

Petitioner's expert, Dr. Benjamin B. Bederson, submitted a declaration (EX1003) that does not reflect independent technical analysis. As Dr. Singh explains, and as Patent Owner highlighted in its Preliminary Response, Dr. Bederson's declaration copies verbatim substantial portions of the Petition's legal arguments and presents them as expert testimony. On the substance, Dr. Singh

demonstrates that Dr. Bederson’s technical opinions are based on fundamental mischaracterizations of the prior art references. *See* EX2019 ¶¶34–134.

II. BACKGROUND

A. The ’091 Patent

The ’091 Patent addresses a digital content reproducing apparatus that manages the display of user operation panels according to related information supplied by an outside server. As the specification explains, “[a] conventional digital broadcasting compatible HDD/DVD decoder which is a digital content reproduction apparatus requires, in addition to channel tuning, reproduction control keys for linear contents such as video and audio, the keys including ‘reproduce’, ‘stop’, ‘fast forward’, ‘fast backward’, ‘temporary stop’ and other operation keys. The apparatus further requires ‘up’, ‘down’, ‘right’, ‘left’, ‘decide’ and four-color keys for operation control of data broadcasting. In order to deal with all functions, a number of remote keys are required.” EX1001 at 1:29-38. An “apparatus using GUI is also required to display all keys so that a wide operation panel rendering area is used.” EX1001 at 1:61-63.

This problem was well-recognized in the field by the early 2000s. As interface complexity grew—with remote controls and on-screen panels accumulating ever more buttons for functions most users rarely needed—the resulting cognitive burden

became a significant usability concern. EX2019 ¶19. The '091 Patent addresses this problem directly: rather than overwhelming the user with every possible control at once, the apparatus presents only the operation buttons appropriate to the user's current viewing context, with the server-supplied metadata making that contextual determination. *Id.*

The '091 Patent provides two distinct types of operation panels—a “linear content operation panel” (A4) and an “interactive content operation panel” (A5)—that are “displayed exclusively and are not displayed at the same time” in the same operation panel display area (A3). EX1001 at 3:66–4:1; Figs. 2–4. The linear content operation panel A4 provides conventional playback functions such as reproduce, stop, temporary stop, fast forward, fast backward, previous skip, and next skip. EX1001 at 3:53–59. The interactive content operation panel A5 provides functions for interacting with data broadcast services such as numerical keys 0–9, up/down/right/left keys, a decide key, and blue/red/green/yellow keys. EX1001 at 3:60–65.

A practical example illustrates the innovation. A modern television system may play recorded movies, streamed video, live broadcasts, and interactive content such as game shows—each requiring different user controls. A recorded movie calls for playback buttons (play, pause, rewind); an interactive game show calls for

navigation buttons (directional keys, select). Before the '091 Patent, systems either presented all possible buttons simultaneously—cluttering the display—or required the user to switch manually between control modes. The '091 Patent solves this by having the server that delivers the content also deliver metadata instructing the player which set of buttons to present. The player need not independently determine the content type; the server communicates that determination through the accompanying metadata. EX2019 ¶21. This is the central architectural question in this proceeding: does the server decide which controls to show (through delivered metadata), or does the local device decide on its own (through hardcoded logic)? *Id.*

FIG. 2

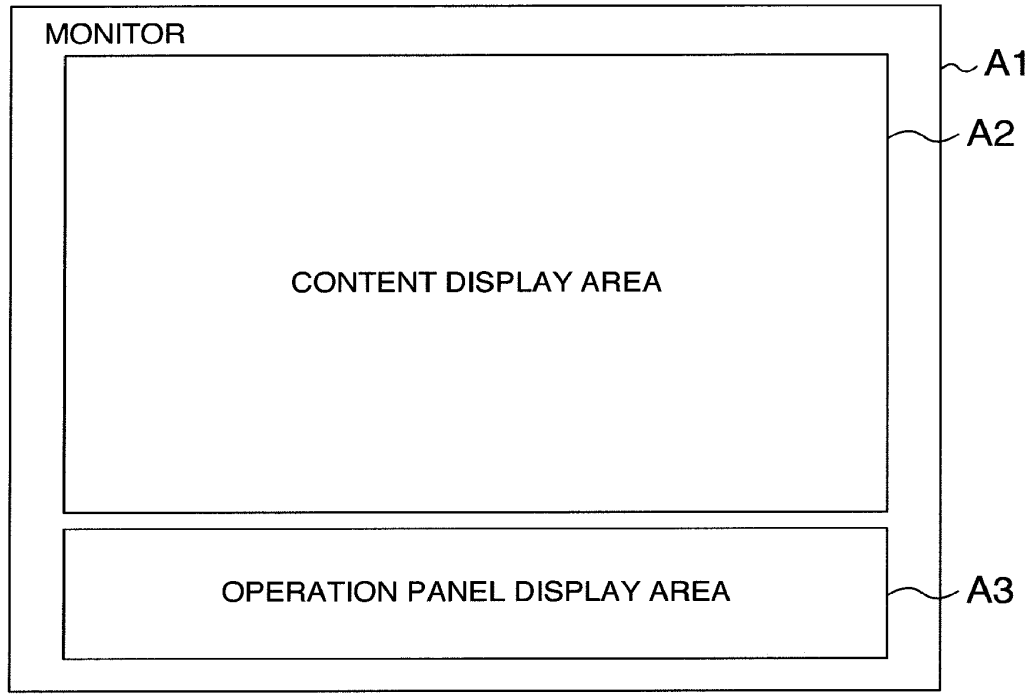
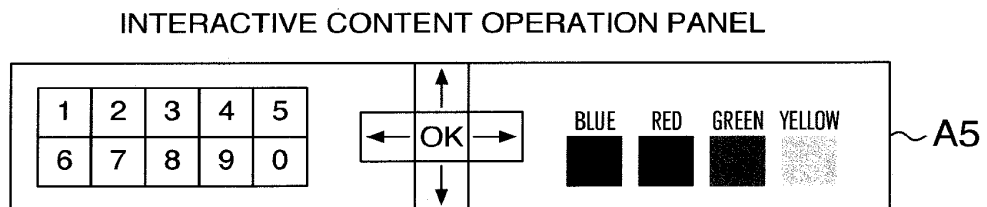


FIG. 3



FIG. 4



EX1001 at Figs. 2-4 (showing the digital content reproduction apparatus with the linear content operation panel A4 and interactive content operation panel A5, which are displayed exclusively in the operation panel display area A3).

The '091 Patent teaches that the apparatus receives “related information” from an outside server, and that this related information includes both “time related information” and “panel related information.” EX1001 at Claim 1. The controller uses the time related information to determine a period during which at least one of the interactive operation buttons is displayed, and outside that time period, the controller displays linear or interactive operation buttons based on the panel related information. EX1001 at Claim 1.

The specification illustrates the practical importance of this architecture using the concept of an “appreciation term”: “includes up-to-date news, weather forecast and the like ... have a nature of an appreciation term and it is difficult to consider that these contents are referred to after, e.g., one month.” EX1001 at 5:42–46. Accordingly, “[i]f contents are outside the appreciation term, data broadcasting is not displayed even if the auto_start_flag is ‘1’, but the linear content operation panel is displayed. If the contents are within the appreciation term and a user does not still view the contents, the data broadcasting is automatically displayed even if the

auto_start_flag is ‘0’ and the interactive content operation panel is displayed.”
EX1001 at 5:49–55.

To illustrate: in a live television competition, the server may specify that interactive voting buttons should appear while the competition is ongoing—enabling viewers to vote for participants in real time. Once the competition concludes and the winner is selected, it no longer makes sense to present voting controls; the appreciation term expires and the system switches to showing linear playback buttons (rewind, fast-forward) so the user can review the content. EX2019 ¶23. The system consults content-specific temporal attributes—not local user inactivity or hardcoded timers—to determine which panel to present. *Id.*

At its core, the ’091 Patent’s contribution is an architecture in which the server—not the local device—determines which operation panel to display. The server delivers content together with metadata that governs which panel is appropriate, including temporal parameters that further inform panel selection based on when the content is viewed. EX2019 ¶24. Unlike prior systems that relied on local logic or user commands to manage the interface, the ’091 Patent delegates that intelligence to the content provider through the metadata accompanying each piece of content. *Id.*

This server-driven approach carries practical engineering significance. In a client-driven architecture, the local device must embed all the logic needed to handle every possible content type—and introducing new content categories requires updating the device’s firmware or software. The ’091 Patent’s architecture eliminates that constraint: because the server delivers the relevant presentation instructions alongside the content itself, the content provider can introduce new UI behaviors without modifying deployed client devices. EX2019 ¶25. This reduces client-side maintenance burden and decouples content innovation from device update cycles. *Id.*

B. Prosecution History

In the Notice of Allowance dated July 3, 2023, the Examiner identified as uniquely distinct the features reciting the “time related information” and “panel related information” and their use by the controller to govern the alternative display of operation panels. EX1002 at 23. The Examiner found the closest prior art failed to teach these limitations. *Id.*

Importantly, the Examiner considered all of the references Samsung now relies upon—and far more besides. The face of the ’091 Patent lists over 200 prior art references spanning four pages, including more than 80 U.S. patents, more than 60 U.S. patent application publications, 16 foreign patent documents, and dozens of

other publications encompassing technical standards, user guides, academic papers, IPR petitions, and expert reports. EX1001 at Pages 2–5. Among those references, Phillips, Wallis, Ellis, and Uchida are each listed on the face of the '091 Patent. EX1001 at Pages 2–3. Although Ellis '430 (EX1021) was not itself cited on the face of the patent, a later application publication in the same patent family, US 2008/0184297 A1, was cited and considered, and it shares the same 126 Figures and corresponding description as EX1021. EX1001 at Page 3; EX2016 at Page 1. Thus, the substance of Ellis '430's disclosure was before the Examiner. EX2019 ¶27.

Moreover, the Examiner did not evaluate these references in a vacuum. The prosecution record reflects that the Examiner reviewed prior IPR Petitions in which combinations of these same references were asserted against the '091 Patent's great-grandparent patent (U.S. Patent No. 8,170,394). EX2019 ¶28. In particular, the Examiner considered the Petition in IPR2019-00089 (*Blackberry Corp. v. Maxell, Ltd.*), which challenged claims of the '394 Patent on six grounds of unpatentability, including claims as anticipated by Phillips, claims as obvious over Phillips and Wallis, and claims as obvious over Phillips-based grounds and Uchida. EX1001 at Page 3; EX1005 at 1–6. That proceeding was instituted, and the Board's March 29, 2019 Institution Decision analyzed these references at length. EX1005. The

Examiner also considered the Petitions for IPR2022-01348 and IPR2023-00316. EX1001 at Pages 1, 3. EX2019 ¶28.

In addition, the Examiner had before him the Expert Report of Benjamin B. Bederson, Ph.D., Regarding Invalidity of U.S. Pat. No. 8,170,394—the same expert Samsung now relies upon in this proceeding—which applied these same prior art references against the claims of the '394 Patent. EX1001 at 36. **The record thus establishes that the Examiner had full visibility into the very prior art theories Samsung now presses, including detailed expert analysis applying these references to the patent family, and yet determined that claims 1–20 of the '091 Patent were patentable on the strength of the time related information and panel related information limitations set forth in the Reasons for Allowance.** EX2019 ¶29. Samsung's Petition includes materially false statements asserting that certain references "w[ere] not considered during prosecution of the '091 patent." Petitioner's "clarification" in Paper 14 that "there is no evidence the examiner substantively considered any of them during prosecution" is of no moment. The face of the '091 Patent directly contradicts those assertions. Additionally, A reference submitted, but not substantively discussed during prosecution, nonetheless qualifies as prior art previously presented to the Office. *Fitesa Simpsonfille, Inc. v. The Proctor & Gamble Co.*, IPR2023-01450, Paper 11 at 10-19 (P.T.A.B. Mar. 20, 2024)

(denying institution based on §325(d) because Petition was based on previously presented and cumulative art and that Petitioner failed to demonstrate that the Examiner erred in the evaluation of the prior art). As further shown below, Petitioner has not demonstrated the Office erred in prior evaluation of the prior art.

Notably, the PTAB’s March 29, 2019 Institution Decision in IPR2019-00089 reveals the specific manner in which Phillips and Wallis were previously combined. In that earlier proceeding, the petitioner relied on Phillips as disclosing all limitations of the challenged claims, and added Wallis only “[t]o the extent there is a more narrow interpretation of the claim language ‘a controller which controls the alternative display of either of the linear content operation panel or the interactive content operation panel . . . ,’ such that this limitation requires an assessment of the content’s metadata to determine if it is linear or interactive content and then, based on that determination, display an appropriate operation panel.” EX1005 at 41-42. The Examiner of the ’091 Patent was therefore aware of the specific Phillips–Wallis combination theory—metadata-driven panel switching—and nonetheless found the ’091 Patent’s claims patentable because the ’091 Patent adds the time related information and panel related information architecture that neither Phillips nor Wallis, alone or in combination, discloses. EX2019 ¶29.

C. Summary of the Grounds

Ground	Claims	Prior Art
1	1, 3–5, 7, 11–15, 17, 20	Phillips, Wallis
2	1, 3–5, 7, 11–15, 17, 20	Phillips, Wallis, Logan
3	2, 6, 10, 16	Phillips–Wallis combinations, Uchida
4	8, 9, 18, 19	Phillips, Wallis, Ellis
5	8, 9, 18, 19	Phillips, Wallis, Logan, Ellis
6	1–3, 6–9, 14–19	Ellis '430, Wallis

III. CLAIM CONSTRUCTION

Patent Owner submits that each challenged claim term should be given its ordinary and customary meaning as understood by a person of ordinary skill in the art at the time of the invention, consistent with the specification and prosecution history of the '091 Patent. 37 C.F.R. § 42.100(b); *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc). No specialized construction is required to resolve the disputes in this proceeding. Patent Owner reserves all rights to dispute any construction Petitioner may advance, consistent with the positions articulated herein.

IV. PERSON OF ORDINARY SKILL IN THE ART

Patent Owner does not dispute the general characterization of the level of ordinary skill proposed by Petitioner. As Dr. Singh explains, however, a POSITA working in this technological field would also have been familiar with server-client design patterns used in digital broadcast and video-on-demand platforms—including the critical difference between functionality that resides on a server and functionality that executes on the local user device. EX2019 ¶16. By the mid-2000s, the evolution of client-server computing—progressing from centralized mainframe models through two-tier and three-tier architectures—had made it well understood in the art that the allocation of processing duties between server and client carries significant design implications. EX2019 ¶17. A POSITA would have appreciated that a server-driven system, in which the server dictates UI behavior through transmitted instructions or metadata, operates on a fundamentally different design philosophy than a client-driven system, where the local device governs its own interface based on embedded logic alone. EX2019 ¶17. The '091 Patent's architecture is of the server-driven variety, and that distinction is central to every ground in this proceeding.

Put differently, in a server-driven system the server retains authority over presentation-layer decisions and communicates those decisions to the client through

metadata. The client executes what the server instructs rather than making independent UI choices. In a client-driven system, by contrast, the device determines its own interface behavior using locally stored rules, without consulting the server.

EX2019 ¶17. A POSITA would have understood that these two paradigms entail fundamentally different data flows, different allocation of processing responsibility, and different implications for system extensibility—differences that bear directly on every obviousness ground in this proceeding. *Id.*

V. DR. BEDERSON’S DECLARATION LACKS INDEPENDENT TECHNICAL ANALYSIS

As a threshold matter, Dr. Bederson’s Declaration should be given little to no weight because it does not reflect independent technical analysis. As Patent Owner explained in its Preliminary Response, Dr. Bederson’s Declaration copies verbatim substantial portions of the Petition’s legal arguments and presents them as expert testimony.

For example, the motivation-to-combine section for Ground 1 in the Petition and the corresponding section in Dr. Bederson’s Declaration are word-for-word identical: “A POSITA would have been motivated to combine Phillips and Wallis at least because they are analogous art to the ’091 patent as they are directed to the same field of endeavor, i.e., interactive televisions systems that provide enhanced user experiences through specially formatted screen displays and presentation of

user controls.” EX1003 ¶149. This pattern repeats throughout Dr. Bederson’s Declaration for each of the six grounds.

This is precisely the type of conclusory, attorney-drafted expert testimony that the Board has repeatedly found entitled to little or no weight. *See Xerox Corp. et al. v. Bytemark, Inc.*, IPR2022-00624, Paper 12, at 5 (P.T.A.B. Feb. 10, 2023) (affirming denial of institution where “the expert declaration merely offered conclusory assertions without underlying factual support and repeated, verbatim, Petitioner’s conclusory arguments”); *Kinetic Techs., Inc. v. Skyworks Solutions, Inc.*, IPR2014-00529, Paper 8, at 15–16 (P.T.A.B. Sept. 23, 2014) (“Merely repeating an argument from the Petition in the declaration of a proposed expert does not give that argument enhanced probative value,” and a petitioner cannot show obviousness based upon such “mere conclusory statements”) (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)); *see also TRW Auto. US LLC v. Magna Elecs., Inc.*, IPR2014-00258, Paper 18, 38 (P.T.A.B. Mar. 28, 2014) (“If the expert is relying on the expert’s experience, then the expert must explain how that experience leads to the conclusion reached, why that experience is a sufficient basis for the opinion, and how that experience is reliably applied to the facts.”); *InfoBionic, Inc. v. Braemar Mfg., LLC*, IPR2015-01704, Paper 11, 6 (P.T.A.B. Feb. 16, 2016) (denying institution because expert merely repeated the argument in the Petition about what a

reference meant without explaining why the expert believed that meaning to be correct); *Cardiocom, LLC v. Bosch Healthcare Sys., Inc.*, IPR2013-00439, Paper 26, 15–16 (P.T.A.B. Jan. 16, 2014).

Under 37 C.F.R. § 42.65(a), expert testimony that does not disclose the underlying facts or data on which it is based is entitled to little or no weight. As explained in *Xerox*, such testimony includes a “declaration [that] does not provide any technical detail, explanation, or statements supporting why the expert determines that the feature in question was required or would have been obvious based on the prior art disclosure. . . . Instead, the declaration copies, word-for-word, Petitioner’s conclusory assertions.” IPR2022-00624, Paper 12, p. 5.

Beyond the verbatim copying, Dr. Singh identifies specific, substantive errors in Dr. Bederson’s technical analysis, which are addressed in detail in the sections that follow. Dr. Singh’s analysis demonstrates not merely that Dr. Bederson parroted the Petition, but that the technical conclusions he adopted are incorrect. Critically, the USPTO’s July 31, 2025 Memorandum mandates enforcement of 37 C.F.R. § 42.104(b)(4), which requires that an IPR petition “must specify where each element of the claim is found in the prior art patents or printed publications relied upon,” makes clear that “applicant admitted prior art (AAPA), expert testimony, common sense, and other evidence that is not ‘prior art consisting of patents or printed

publications’ (collectively, ‘general knowledge’) may not be used to supply a missing claim limitation.” Here, Dr. Bederson’s testimony is being offered to supply claim limitations not found in the prior art patents or printed publications, as shown below with respect to at least “time related information,” “panel related information,” and the dual-input switching architecture of limitations [1i] and [1j]. Such testimony cannot carry Petitioner’s burden. *See Qualcomm Inc. v. Apple Inc.*, 24 F.4th 1367, 1373–77 (Fed. Cir. 2022).

VI. GROUND 1: CLAIMS 1, 3–5, 7, 11–15, 17, AND 20 ARE NOT OBVIOUS OVER PHILLIPS IN VIEW OF WALLIS

A. There Is No Motivation to Combine Phillips with Wallis

Dr. Bederson’s motivation to combine rests on the assertion that Phillips and Wallis are “directed to the same field of endeavor, i.e., interactive televisions systems that provide enhanced user experiences.” EX1003 ¶149. He further asserts that the combination “would be a simple and predictable outcome of a condition in an ‘if’ programming statement.” EX1003 ¶152. In providing his obviousness analysis, Dr. Bederson repeatedly gap fills by referring to the knowledge of POSITA. This is legally and factually impermissible. *See K/S Himpp v. Hear-Wear Techs., LLC*, 751 F.3d 1362, 1365-66 (Fed. Cir. 2014). (“We recognize that the Board has subject matter expertise, but the Board cannot accept general conclusions about what is ‘basic knowledge’ or ‘common sense’ as a replacement for

documentary evidence for core factual findings in a determination of patentability.”); *see also* Memorandum from Director Coke Morgan Stewart, Enforcement and Non-Waiver of 37 C.F.R. § 42.104(b)(4) and Permissible Uses of General Knowledge in Inter Partes Reviews at 2 (July 31, 2025). Dr. Bederson’s conclusory reasons to combine these references are deficient because they are not grounded in the teachings of the references but are based on Dr. Bederson’s own speculation.

As Dr. Singh explains, this rationale is both insufficient and tainted by hindsight. EX2019 ¶¶47–52. As a threshold matter, Phillips never selects between a linear and interactive display panel for any piece of content: at most, Phillips allows user-controlled (not server-information-determined) selection between two interactive overlays (flip and browse) for live streaming content; and upon purchase of a video on demand, only a linear panel is ever displayed for the purchased video content once the purchase has been made. EX2019 ¶47. No aspect of Wallis, when combined with Phillips, would suggest the ability to contextually and exclusively show a linear or interactive panel for any given content. At most, the metadata attributes as disclosed in Wallis could be used to disable some aspects of the UI in a linear or interactive panel, but not to choose between a linear and interactive panel. *Id.* The Supreme Court has cautioned that “[a] factfinder should be aware, of course,

of the distortion caused by hindsight bias and must be cautious of arguments reliant upon ex post reasoning.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007). In 2005, the interactive television landscape spanned a wide array of systems tackling disparate challenges. EX2019 ¶48. The field encompassed electronic program guides, video-on-demand content management, personal video recording, interactive advertising, home shopping, and more. The ATSC standard alone defined dozens of distinct functional layers—transport, session management, application signaling, content referencing, user interaction, and more—each with its own set of design problems and solutions. EX2019 ¶47. A POSITA faced with Phillips’s program guide and Wallis’s promotional sequence navigation system would have recognized that these references address different layers of the interactive television stack and solve different problems, and would have had no specific reason to extract Wallis’s per-item navigation flags and repurpose them as UI panel-selection metadata within Phillips’s playback system. *Id.* Phillips is concerned with electronic program guides and VoD playback through a series of mode-specific user screens; Wallis is concerned with enabling non-linear navigation through sequences of promotional video content. EX2019 ¶¶49–50. Neither reference contemplates adjusting the type of playback operation panel on a per-content basis by reference to

metadata—that idea is the '091 Patent's contribution, not something found in the prior art. EX2019 ¶51.

The “if programming statement” argument mistakes the mechanical simplicity of coding a conditional for the inventive act of conceiving what that conditional should test. EX2019 ¶52. Every system, no matter how novel, can be retroactively described as a sequence of if-then branches; the challenge has never been writing the code—it is devising the system design that the code embodies. *Id.* The difficulty in system design is identifying what condition to test, what data to use as input, and how to architect the flow of that data through the system. *Id.* The essential complexity lies in the architectural decision to route server-delivered metadata to a client-side controller and use it as the branching condition for UI panel selection. *Id.* Dr. Bederson points to no teaching in Phillips or Wallis that would have prompted a POSITA to make that design choice. *Id.* Under *KSR*, “[t]here must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) (cited with approval in *KSR*, 550 U.S. at 418). The bare possibility that elements could be combined does not substitute for evidence that a POSITA would have had a reason to do so. *See KSR*, 550 U.S. at 418 (“[A] patent composed of several elements is not

proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.”).

Additionally, a POSITA would have had no reason to retrofit Phillips’s mode-specific screen design with Wallis’s per-item promotional navigation attributes. Phillips organizes its interface around dedicated screens for distinct tasks—a program guide for browsing, a purchase workflow for VoD selection, and a playback toolbar for viewing—each purpose-built for a particular stage of user interaction. Wallis, by contrast, associates per-item attributes with individual promotional clips to manage navigation within a content sequence. Importing Wallis’s per-item attribute scheme into Phillips would mean reconceiving Phillips’s fixed, screen-based UI as a dynamic, metadata-driven system—which is the very innovation the ’091 Patent claims. A POSITA would have understood that these references solve different problems through different design approaches, and would have had no impetus to transplant Wallis’s promotional-sequence logic into Phillips’s mode-specific screen paradigm. EX2019 ¶¶49–51.

B. The Prior Art Does Not Disclose the Claimed Architecture

A patent claim is not proved obvious unless all elements of the claimed invention are found in a combination of prior art references. *Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1164 (Fed. Cir. 2006). Further, a petitioner must

demonstrate both “that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.”

Intelligent Bio-Systems, Inc. v. Illumina Cambridge Ltd., 821 F.3d 1359, 1367–68 (Fed. Cir. 2016). Under the USPTO’s July 31, 2025 Memorandum and Rule 104(b)(4), each missing claim element must be identified in the prior art patents or printed publications relied upon—expert testimony characterizing a reference as teaching a limitation not actually disclosed in its text cannot substitute for a proper mapping. *See* 37 C.F.R. § 42.104(b)(4). **A major deficiency of Ground 1 is that Phillips and Wallis, individually and in combination, do not teach the core architecture of the ’091 Patent:** a controller that receives server-delivered “related information”—including both “time related information” and “panel related information”—and uses that information to alternatively display either a linear operation panel or an interactive operation panel together with the reproduced digital contents. As Dr. Singh demonstrates in detail, each of the key limitations [1e] through [1j] is absent from the Phillips–Wallis combination. Dr. Bederson’s attempts to characterize these references as teaching the claimed architecture amount to using expert testimony to supply missing claim limitations—precisely what Rule 104(b)(4) prohibits.

C. Limitation [1e]: Phillips Does Not Disclose “Alternatively Displayed” Operation Panels Together with Reproduced Digital Contents

Dr. Bederson opines that “Phillips displays either interactive content, as shown in the VoD screens of Figures 14-17, or linear content, as shown in the video display of Figure 18,” and that “the outputted digital content—e.g., video-on-demand menus or the selected video—is displayed concurrently in the same screens as the displayed operation panels.” EX1003 ¶¶60, 98. Dr. Singh explains why this characterization is technically incorrect. EX2019 ¶¶37–44.

Phillips’s VoD information screen (Figure 17a) and its playback screen (Figure 18) are sequential steps in a purchase-and-play workflow, not two operation panels that are alternatively displayed “together with the reproduced digital contents.” EX2019 ¶¶39–40. When a user is viewing Figure 17a—the VoD information screen of a video-on-demand content with “BUY” and “REC” options—no digital content is being reproduced; the user is still browsing. As Phillips itself explains, “Screen 232 may include information 236 on the selected video-on-demand content, such as title, run time, price, rating, and a description of the selected video-on-demand content.” EX1010 at 19:30-36. The information shown in Figure 17a is thus descriptive metadata *about* the content—such as title, run time, price, rating, and description—not the reproduced digital content itself. EX1010 at 19:61-20:17. Only after the user purchases the content does Figure 18 appear with the VoD

playback toolbar. EX1010 at 20:18-27. As Dr. Singh explains, Dr. Bederson's characterization of VoD menus displayed before content is purchased as "operation panels" displayed "concurrently" with reproduced content ignores this fundamental sequential relationship. EX2019 ¶57.

Dr. Bederson also identifies Phillips's flip and browse overlays (Figures 9 and 10) as "interactive operation panels." EX1003 ¶¶101–102. But as Dr. Singh demonstrates, these are program-listings overlays displayed over live broadcast television—they contain schedule information such as titles, times, channels, and ratings for live television (not reproduced digital content), not operation buttons for controlling the reproduction of digital content. EX2019 ¶42. Notably, Figures 9, 10, and 18 are the only Phillips figures that are displayed together with content being reproduced. They appear in entirely different contexts (live TV browsing versus VoD playback) and display entirely different types of information. EX2019 ¶59.

Dr. Bederson relies on a prior PTAB decision in the Blackberry IPR to support his mapping, quoting the Board's statement that "Figures 17a and 18 are examples of the alternative display of either the linear content operation panel or the interactive content operation panel..., together with outputted digital content." EX1003 ¶105 (quoting EX1004 at 29). But this citation does not cure the technical deficiency: Figure 17a does not display any reproduced digital content. The Board's prior

statement does not alter the fact that Phillips’s system presents these screens sequentially, in different use contexts, not as alternative panels displayed “together with the reproduced digital contents.” EX2019 ¶59. Further, claims of the patent in that Petition did not include “time related information” or “panel related information for deciding whether displaying the first operation panel including at least one of the linear operation buttons or the second operation panel including at least one of the interactive operation buttons.”

In summary, among all of Phillips’s screens, only Figures 9, 10, and 18 are displayed together with any content. The flip and browse overlays (Figures 9 and 10) appear over live broadcast television, while the playback toolbar (Figure 18) appears during VoD playback. EX2019 ¶61. The remaining screens (Figures 7, 14–17a) are non-playback menus that appear at different stages of the user’s interaction when no digital content is being reproduced. *Id.* At most, Phillips discloses one linear playback toolbar (Figure 18) and a variety of non-playback overlays and menus (Figures 7–10, 14–17a), each appearing in different contexts with different content, at different stages of the user’s interaction with the system. EX2019 ¶60. Phillips does not disclose a controller configured to alternatively display two operation panels—one linear and one interactive—together with the same reproduced digital content based on received related information.

D. Limitation [1f]: Phillips Does Not Disclose “Time Related Information”

Dr. Bederson equates Phillips’s overlay auto-removal timeout—“after a few seconds or a minute or two” of user inactivity—with the claimed “time related information.” EX1003 ¶109. He then asserts this timeout is received from an outside server because “program guide application functions ... may be supported using server 36.” EX1003 ¶110. Dr. Singh explains why this analysis is fundamentally flawed. EX2019 ¶¶62–69.

Phillips’s overlay auto-dismissal feature is a standard inactivity timer—a local UI housekeeping function, not content-specific metadata sent from a server. EX2019 ¶¶64-65. A POSITA would have recognized this as a standard implementation of an “idle timer” or “inactivity timeout”—a well-known UI pattern in which an interface element is dismissed after a period of no user interaction, regardless of what content is being displayed. EX2019 ¶63. Such timeouts are implemented locally on the client device, typically as a countdown timer that resets with each user input event and triggers a UI state change (hiding the overlay) upon expiration. They are device-level settings, not content-level metadata. EX2019 ¶64. The same timeout applies no matter what program the user happens to be watching; it is a device-level setting, not “time related information which represents a time during which the reproduced digital contents and at least one of the interactive operation buttons are displayed”

as claim 1 requires. *Id.* Nowhere does Phillips characterize this timeout as “time information,” tie it to any particular piece of content, or indicate that a server transmits the timeout value alongside the content stream. *Id.* ¶65. Phillips describes no mechanism by which time metadata received from a server defines a period during which a particular operation panel is displayed together with the reproduced content, as claim 1 requires. *Id.*

This difference is not semantic—it is structural. The ’091 Patent uses what Dr. Singh characterizes as a declarative, policy-based model: the server embeds temporal parameters in the metadata accompanying each content item, and the client’s controller consults those parameters to determine when particular UI elements should be active. EX2019 ¶67. Phillips’s system, by contrast, follows an imperative, event-driven model: the client device autonomously decides when to hide an overlay by monitoring whether the user has been inactive. EX2019 ¶68. One design requires a dedicated data channel carrying content-specific temporal values from server to client; the other requires nothing beyond a local idle timer. *Id.* These are categorically different architectures, and relabeling one as the other does not bridge the gap. *See In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988) (“[O]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.”).

To put this in concrete terms: the '091 Patent requires information to flow from server to client; Phillips is designed to operate entirely within the client's local state machine. EX2019 ¶66. Phillips's overlay timeout is a generic local setting that is the same regardless of the content. *Id.* The '091 Patent's time related information, by contrast, is content-specific metadata that travels with the digital content from the outside server—it “represents a time during which the reproduced digital contents and at least one of the interactive operation buttons are displayed.” EX1001 at Claim 1. This information is intrinsically tied to the nature and characteristics of the specific content being reproduced—for example, the appreciation term described in the specification is set “in accordance with record days and times and information on the contents.” EX1001 at 5:46–48. Phillips and the '091 Patent describe architecturally distinct concepts that a POSITA working in digital broadcast systems circa 2005 would not have confused. EX2019 ¶66.

Dr. Bederson's own deposition testimony confirms this architectural distinction. When asked whether “accessing something from a server is not the same as making a decision to access something locally,” Dr. Bederson agreed that “they are different ways of doing things.” EX2023 (Transcript of Deposition of Dr. Benjamin B. Bederson) at 14:1–22. He further conceded that “a set-top box could have a timer so that it could determine if ten seconds have passed locally” (EX2023

at 23:4–15), and that “a POSITA would understand you could choose to hard code into a software how long a particular item could be displayed” (EX2023 at 23:16–24:2). These concessions confirm that Phillips’s overlay timeout—which merely removes an overlay “after a few seconds or a minute or two” of user inactivity—is most naturally understood as a local timer, not as server-delivered “time related information” as claim 1 requires.

Dr. Bederson attempts to bridge this gap by invoking Shneiderman’s “Eight Golden Rules of Interface Design” and the general principle of “consistency.” EX1003 ¶¶112–113. But as Dr. Singh explains, Shneiderman’s consistency rule is a high-level usability guideline—it counsels uniformity in “color, layout, capitalization, fonts, and so on”—and says nothing about how or from where a system should obtain the values that drive its UI behavior. EX2019 ¶69. A general admonition to be visually consistent does not teach, or even hint, that a server should transmit content-specific time values as metadata to dictate how long interactive buttons remain on screen. *Id.* A POSITA would have recognized that a locally implemented inactivity timeout and server-transmitted, content-specific temporal metadata serve entirely different functions at different levels of the system stack. *Id.*

Dr. Bederson’s deposition testimony further undermines his reliance on Shneiderman. Dr. Bederson could not answer whether Shneiderman’s consistency

rule specifies where information should be stored. EX2023 at 44:10-12. When asked whether it specifies whether information should be stored on the device or on the server, he answered: “I don’t think so.” EX2023 at 44:13-15. He could not answer whether it specifies whether information should be hard coded or received dynamically. EX2023 at 44:16-18. He also could not answer whether it specifies when information should be delivered to the device. EX2023 at 44:23-25. These admissions confirm that Shneiderman’s “consistency” principle is architecture-agnostic—it says nothing about whether information should come from a server, be hard coded locally, or be delivered dynamically. It therefore cannot supply the motivation to adopt the specific server-delivered, content-specific metadata architecture of the ’091 Patent.

E. Limitation [1g]: Wallis Does Not Disclose “Panel Related Information”

Dr. Bederson opines that Wallis’s attributes constitute “panel related information” because they “govern the presentation of selectable portions of the screen.” EX1003 ¶114. Most critically, he asserts that “when the ‘video controllable’ attribute is present, a linear operation panel enabling control of a video is displayed.” EX1003 ¶116. Dr. Singh demonstrates that this characterization fundamentally misreads Wallis. EX2019 ¶¶70–78.

Wallis's "video controllable" attribute does not instruct the system to render a linear operation panel with playback buttons. What Wallis actually says is that this attribute indicates "whether the ff/rew/pause keys [are] active." EX1011 ¶61. Indeed, Wallis explains: "The user has varying degrees of control over the interactive navigation video content item. By setting the video controllable metadata flag in the associated attributes for a given content item, it is possible to indicate that VCR style controls are allowed, permitting the user to pause, fast forward or rewind the interactive navigation video at the touch of the appropriate remote control buttons." EX1011 ¶0079. As Dr. Singh explains, there is a significant technical gap between these two concepts: specifying which on-screen buttons to display in an operation panel is not the same as specifying which physical remote control keys will respond to input during playback of a given promotional clip. EX2019 ¶74. Wallis contains no disclosure that the "video controllable" attribute triggers the rendering of any on-screen operation panel, much less that it selects between two alternative panels. EX2019 ¶75.

A concrete example illustrates this point. Consider the content sequence in Wallis's Figure 1. Sting A (an interstitial branding clip) is not skippable and has no target; the user must watch it. Content B (a music video) is skippable, VCR-controllable, savable to favorites, and linked to Content F as a target; the user can

skip it, fast-forward through it, save it, or jump to a related full-length video. Promo C (an advertisement) is not skippable and not VCR-controllable; the user must watch the ad. EX1011 ¶¶30–32. The attributes thus control the user’s navigational freedom within the sequence on a per-item basis. They do not control which of two operation panels is displayed on screen. Nowhere does Wallis state that when the “video controllable” attribute is set to true for Content B, a linear operation panel with ff/rew/pause buttons is drawn on screen; it merely states that the physical ff/rew/pause keys on the remote are “active,” i.e., responsive to presses, during playback of that item. EX2019 ¶75.

Viewed more broadly, Wallis’s attributes are designed to manage how a user navigates through a sequence of promotional content—controlling whether a user may skip past a promo, fast-forward through a clip, bookmark an item, or jump to a linked destination. EX1011 ¶¶57–65. None of these attributes dictates which of two on-screen operation panels should be rendered alongside reproduced content. EX2019 ¶44. Dr. Singh highlights a key architectural point that Dr. Bederson’s analysis overlooks: Wallis’s attributes function as permission controls—they determine what actions a user is *allowed* to perform with a given content item. EX2019 ¶¶44–45. That role is architecturally distinct from panel-selection metadata, whose purpose is to determine what the user *sees* on screen. EX2019 ¶45. In standard

software design, these two concerns belong to separate subsystems—an access-control or policy layer versus a UI presentation layer—and a POSITA would not have treated one as a substitute for the other. EX2019 ¶45. Wallis does not disclose two distinct operation panels or any mechanism for choosing between them based on attribute values. *Id.* Characterizing these navigation-permission flags as “panel related information” is an interpretive overlay supplied by the expert, not a disclosure found in Wallis. Unsupported expert characterization of this kind cannot carry Petitioner’s burden. *See Xerox Corp. et al. v. Bytemark, Inc.*, IPR2022-00624, Paper 12, at 5 (P.T.A.B. Feb. 10, 2023).

An everyday analogy clarifies this distinction. Consider a movie theater showing both standard films and interactive “choose-your-own-adventure” films. An access-control system determines whether the audience is *permitted* to pause the movie—during a live broadcast screening, the pause function may be disabled; during a rental, it may be enabled. That is what Wallis’s attributes do: they enable or disable input responses within the existing interface. A panel-selection system, by contrast, determines which set of controls appears on the armrest console—a simple play/stop interface for standard films, or a full navigation console with directional buttons for interactive films. That is what the ’091 Patent does: it determines what the user sees on screen. Wallis answers the question “may the user press fast-

forward?"; the '091 Patent answers the question "should the fast-forward button be visible at all, and if not, what buttons should appear instead?" EX2019 ¶45. These are fundamentally different engineering tasks handled by different subsystems.

Moreover, Dr. Bederson identifies no passage in Wallis where those attributes are described as being provided to the playback device and then used by the device to choose between two different operation panels displayed with reproduced contents. EX2019 ¶77. Wallis primarily describes its attributes as stored and used in a service database 204 on the server side; the attributes are used to govern the behavior of the content server 202 and the video server manager 208 in delivering content. EX1011 ¶¶35–42. The gap between Wallis's server-side usage-rule enforcement and the '091 Patent's client-side panel rendering based on delivered metadata is a fundamental architectural difference that Dr. Bederson's analysis does not—and cannot—bridge.

Dr. Bederson's own deposition testimony confirms the distinction between enabling an input and displaying a panel on screen. When asked whether "a POSITA could design a system that enables fast-forward without showing a fast-forward button on the screen," Dr. Bederson agreed: "you could build a system to have a ... physical fast-forward button on a remote control that can control fast-forward without changing what is displayed on the screen as far as the user interface goes."

EX2023 at 40:6–18. He further conceded that a POSITA “could choose to ignore user input with or without what is visible on the screen” (EX2023 at 39:12–21) and that a POSITA could design a system with “graphical user interface elements on a screen that don’t respond to user input” (EX2023 at 40:19-41:2). These admissions establish that input-enabling (what Wallis’s “video controllable” attribute does) and display-rendering (what the ’091 Patent’s panel related information does) are architecturally separable functions that a POSITA would not have conflated.

F. Limitations [1i] and [1j]: Dr. Bederson Constructs an Unsupported Scenario

Dr. Bederson constructs a scenario for limitations [1i] and [1j] that is found in neither Phillips nor Wallis. EX2019 ¶81. For limitation [1j], he opines that “when the interactive operation buttons associated with the flip tuning feature disappear from the display (after a short period of time), the linear operation panel (e.g., as shown in Fig. 18, above), would then be displayed on the channel being viewed, for example, based on Wallis’s panel related information associated with the content.” EX1003 ¶122.

As Dr. Singh explains, Dr. Bederson has assembled a chain of events that appears nowhere in either reference. EX2019 ¶84. Phillips contains no disclosure that the disappearance of a flip or browse overlay triggers the appearance of any playback toolbar, let alone the VoD toolbar 248 superimposed on live television. *Id.*

Dr. Bederson splices together the overlay timeout behavior described in Phillips with the per-item navigation attributes described in Wallis to engineer a result that is coherent only if one already knows what the '091 Patent claims. EX2019 ¶84. Treating Wallis's attributes as the mechanism that decides which panel to show "other than during the time represented by the time related information" does not follow from anything Wallis discloses; rather, it reads the '091 Patent's invention back into the prior art. *Id.* This constructed scenario exemplifies precisely the type of impermissible reliance on expert testimony to supply missing claim limitations that the USPTO's July 31, 2025 Memorandum and Rule 104(b)(4) foreclose—no prior art patent or printed publication of record actually discloses this dual-input switching architecture, and Dr. Bederson's expert construction cannot serve as a substitute. *See* 37 C.F.R. § 42.104(b)(4).

Read together, limitations [1i] and [1j] establish a dual-input switching architecture at the core of the invention: when the server-defined time window is active, interactive buttons must be displayed irrespective of any other factor; only once that window has closed does the panel related information dictate which panel appears. EX2019 ¶80. Dr. Singh explains that this structure functions as a priority-driven state machine—time-based metadata overrides all other considerations while it is in effect, and content-type metadata takes control only after the temporal

window expires. *Id.* **No reference of record, whether considered alone or in combination, discloses this dual-input architecture.** Phillips provides overlays that come and go in response to local user activity; Wallis provides per-item flags that toggle remote-control key responsiveness. EX2019 ¶81. Taken together, these references still do not describe a system in which two categories of server-supplied metadata work in concert—one defining a temporal window and the other governing panel selection outside that window—to control which operation panel accompanies the reproduced content. *Id.* That Dr. Bederson can construct such a system only by borrowing the answer from the '091 Patent's claims is the hallmark of impermissible hindsight. *See In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988) (“[O]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.”).

An analogy helps illustrate limitations [1i] and [1j]. The '091 Patent's controller functions like a two-mode signal governed by two independent instruction sets from the server. During a server-specified temporal window (the “time related information”), the system always presents the interactive panel—no other factor can override that instruction. Only when that window closes does the second instruction set (the “panel related information”) take over to dictate whether a linear or interactive panel appears. EX2019 ¶80. Dr. Bederson's attempt to construct such a

system by combining elements of Phillips and Wallis is not grounded in anything either reference actually teaches; it is a reconstruction that only makes sense if one starts from the '091 Patent's claims and works backward. *Id.*

G. Claim 14

Claim 14 recites the same core controller architecture as claim 1 but further requires that both the digital contents and the related information be received “from a video on demand server.” EX1001 at claim 14. Petitioner does not meaningfully address these additional requirements, instead simply cross-referencing its analysis of claim 1 for every limitation. As Dr. Singh explains, Phillips's VoD server supplies VoD content, but all UI behavior is driven locally at the set-top box, not by related information received from the VoD server. EX2019 ¶86. Petitioner nowhere identifies where Phillips or Wallis discloses a VoD server delivering the claimed time related information or panel related information. *Id.*

Additionally, a POSITA would not have been motivated to combine Phillips and Wallis to achieve the claimed invention for claim 14. Phillips's UI is organized around discrete mode-specific screens for different tasks (program guide, VoD purchase, playback). Wallis's system manages navigation attributes for promotional content sequences. A POSITA would not have modified Phillips's mode-specific screen architecture to incorporate Wallis's promotional navigation attributes as

panel-selection metadata because: (i) Phillips’s screens serve different functions at different stages of user interaction and are not interchangeable panels; (ii) Wallis’s attributes control promotional sequences, not which type of operation panel to render; and (iii) combining them would require fundamentally rearchitecting Phillips’s locally-controlled UI to accept server-delivered metadata for panel selection—a design concept neither reference contemplates. EX2019 ¶86.

Because Petitioner fails to establish that claims 1 and 14 are unpatentable, all dependent claims challenged in Ground 1 (claims 3–5, 7, 11–13, 15, 17, and 20) likewise survive. *See In re Fritch*, 972 F.2d 1260, 1266 (Fed. Cir. 1992) (dependent claims are nonobvious if the independent claims from which they depend are nonobvious).

VII. GROUND 2: CLAIMS 1, 3–5, 7, 11–15, 17, AND 20 ARE NOT OBVIOUS OVER PHILLIPS IN VIEW OF WALLIS AND LOGAN

Ground 2 adds Logan (EX1013) to the Phillips–Wallis combination of Ground 1. Dr. Bederson asserts that Logan’s Mini-Nav Bar provides additional evidence of “time related information” because the “manner in which the Mini-Nav bar is presented may be configured by ... the provider” to control “the time duration after which the Mini-Nav Bar disappears.” EX1003 ¶¶155–161. Logan explains that “[t]he manner in which the Mini-Nav bar is presented may be configured by the viewer or the provider, either dynamically or statically, to control: a) where on the

screen the Mini-Nav Bar is displayed[;] b) the time duration after which the Mini-Nav Bar disappears may be varied.” EX1013 ¶¶93–95.

As Dr. Singh explains, Logan does not cure the deficiencies of the Phillips–Wallis combination. EX2019 ¶¶87–94. Logan’s Mini-Nav Bar does not constitute a first *and* second operation panel as required by the claims because there is no alternative display—the same Mini-Nav Bar is displayed each time, regardless of the content being played. EX2019 ¶90. The Mini-Nav Bar shows the titles of segments in a football game (e.g., “1st Quarter – Touchdown Pass,” “2nd Quarter – Field Goal”) and allows the user to jump between segments in a playlist. *Id.* Neither the Petition nor Dr. Bederson has explained how segment titles displayed in the Mini-Nav Bar constitute *both* “linear operation buttons receiving user-instructions regarding linear reproduction functions” *and* “interactive operation buttons receiving user-instructions of interactive functions to the outside server.” The Petition simply assumes, without explanation, that a single overlay displaying segment titles satisfies the claim requirement of two distinct operation panels that are alternatively displayed. That assumption is unsupported and insufficient to carry Petitioner’s burden.

Moreover, even if a provider can configure the timeout duration for the Mini-Nav Bar, that is still a system-wide display preference—analogous to a system

administrator setting the screen-saver timeout on a computer—not content-specific metadata that travels with each piece of digital content and determines which operation panel to display. EX2019 ¶94. The '091 Patent's "time related information" is intrinsically tied to the nature of the specific content being reproduced: for example, the appreciation term is set "in accordance with record days and times and information on the contents." EX1001 at 5:46–48. Logan's provider-configured timeout, by contrast, applies uniformly to the Mini-Nav Bar regardless of which sports segment is playing. EX2019 ¶94. This distinction between a global UI configuration parameter and content-specific server-delivered metadata is the same distinction identified in Phillips's overlay timeout, and Logan does nothing to bridge that gap. *Id.* Even if Logan's Mini-Nav Bar were incorporated into Phillips, the resulting system would still not perform the claimed time-governed panel switching: displaying interactive operation buttons during a server-defined time interval, and outside that interval, displaying linear or interactive operation buttons based on panel-related information. EX2019 ¶92. Dr. Bederson's approach merely stacks unrelated overlay features together and declares the result "obvious" as a "simple software modification" (EX1003 ¶162), without identifying any coherent modification pathway that would yield the claimed architecture. EX2019 ¶92.

Furthermore, a POSITA would have had no reason to supplement the Phillips–Wallis combination with Logan’s sports-segment navigation overlay, because Logan is directed to a fundamentally different use case. Logan’s Mini-Nav Bar enables viewers to jump among pre-labeled segments of a recorded football broadcast—a purpose-built tool for sports-replay navigation. EX2019 ¶¶90. Phillips’s program guide, by contrast, presents scheduling data for selecting among programs. These navigation interfaces serve distinct purposes, and merging them would not produce the claimed architecture in which server-delivered metadata controls the alternative display of two operation panels alongside reproduced content. A POSITA would have recognized that grafting a sports-segment navigation bar onto a program guide–based system does not yield the claimed two-panel switching governed by time related and panel related information. EX2019 ¶¶92–93.

VIII. GROUND 3: CLAIMS 2, 6, 10, AND 16 ARE NOT OBVIOUS OVER PHILLIPS–WALLIS COMBINATIONS IN VIEW OF UCHIDA

Ground 3 adds Uchida (EX1015) to the Phillips–Wallis combinations for dependent claims requiring display of panels “in a substantially same panel rendering area” (claims 2 and 10) or maintaining “a rendering area size of the reproduced digital contents” (claims 6 and 16).

Ground 3 depends on the same Phillips–Wallis combinations that fail in Grounds 1 and 2. Because those underlying combinations fail to disclose the

required two-panel architecture governed by time related and panel related information, Ground 3 necessarily fails as well.

Additionally, as Dr. Singh explains, Uchida does not independently cure these deficiencies. EX2019 ¶¶95–103. Uchida’s system uses a local “base device” that communicates with a nearby display device over IEEE 802.11 short-range radio and is physically wired to external input sources such as DVD players, VTRs, and BS digital tuners. EX2019 ¶97; EX1015 at 4:51–65. This base device is not an “outside server” or a video-on-demand server—it merely compresses and relays audio/video signals to the display. EX2019 ¶97; EX1015 at 4:55–61. The control panels in Uchida are generated by the display device’s own onboard software—described as “a so-called software key which is displayed by software to be executed by a control section of the display device” (EX1015 at 5:11–13)—with the panel configuration data held in the display device’s local read-only memory rather than received from any server. EX2019 ¶97. Panel switching in Uchida is triggered by the user touching the screen and depends on which local external input device is currently connected. EX2019 ¶97; EX1015 at 22:3-7. **At no point does any server-supplied metadata instruct the display device which control panel to render.** EX2019 ¶97. Put simply, Uchida demonstrates that a screen can be partitioned into a content area and a control area—a layout principle—but it is silent on how or why the controls should

vary based on metadata received from a server. EX2019 ¶100. Layout geometry and metadata-driven panel selection are different engineering questions. *Id.*

Uchida merely demonstrates that a display can be partitioned into a content region and a control region. EX1015, Figs. 10A-10C. But the buttons appearing in that control region do not depend on server-supplied metadata, nor does their selection alternate based on “related information” as the claims require. EX2019 ¶102. The question Uchida answers is “where on the screen should controls be placed?”—a layout question. The question the claims pose is “which controls should be placed there, and who decides?”—an architectural question presupposing the entire server-driven panel-switching mechanism of claim 1. Uchida’s layout geometry cannot supply a claim element that depends on an architectural feature (metadata-driven panel selection) absent from the underlying Phillips–Wallis combination. EX2019 ¶104. The existence of a screen area designated for controls no more implies the existence of a metadata-driven selection mechanism than the existence of a room implies the existence of the access-control system governing entry to it. *Id.*

Dr. Bederson’s motivation argument for Ground 3 relies on Shneiderman’s “Eight Golden Rules” and “consistency” principles. EX1003 ¶¶177–181. As Dr. Singh explains, generalized design heuristics of this kind do not supply the specific,

reasoned basis needed to show that a POSITA would have combined these three references to arrive at the claimed invention. EX2019 ¶¶101–103. The consistency rule encourages designers to handle similar operations in similar ways—for instance, placing a “save” button in the same location across screens. EX2019 ¶103. But a preference for visual uniformity is not an argument about system architecture. *Id.* Consistent panel placement can readily be achieved through local logic without any server-supplied metadata. *Id.* The leap from a visual-layout preference to the specific architectural innovation of having a server transmit “related information” that dictates which panel to display and for how long involves multiple non-obvious inferential steps that Dr. Bederson neither identifies nor justifies. *Id.*; see *In re Kahn*, 441 F.3d at 988 (rejecting motivation to combine based on “general conclusory statements”); see also *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011) (“Obviousness requires more than a mere showing that the prior art includes separate references covering each separate limitation in a claim under examination.”).

In providing his obviousness analysis, Dr. Bederson repeatedly gap fills by referring to the knowledge of POSITA. This is legally and factually impermissible. See *K/S Himpp v. Hear-Wear Techs., LLC*, 751 F.3d 1362, 1365-66 (Fed. Cir. 2014). (“We recognize that the Board has subject matter expertise, but the Board cannot

accept general conclusions about what is ‘basic knowledge’ or ‘common sense’ as a replacement for documentary evidence for core factual findings in a determination of patentability.”); *see also* Memorandum from Director Coke Morgan Stewart, Enforcement and Non-Waiver of 37 C.F.R. § 42.104(b)(4) and Permissible Uses of General Knowledge in Inter Partes Reviews at 2 (July 31, 2025). Dr. Bederson’s conclusory reasons to combine these references are deficient because they are not grounded in the teachings of the references but are based on Dr. Bederson’s own speculation.

Dr. Bederson’s deposition testimony further confirms that the “consistency” principle does not motivate the claimed architecture. When asked whether a designer could achieve consistency by “show[ing] the same panel for all content,” Dr. Bederson agreed: “It sounds like that would consistently display the same panel in those scenarios.” EX2023 at 47:12–17. This admission is significant because it demonstrates that “consistency” can be achieved without varying panels based on server metadata—indeed, displaying the same panel for all content is itself “consistent.” The consistency principle therefore does not motivate the specific, non-obvious decision to vary the displayed panel based on content-specific, server-delivered metadata. If anything, the principle of consistency would counsel against varying the panel—making the claimed architecture less, not more, obvious.

Moreover, a POSITA would have had no reason to combine Uchida’s local display partitioning with the Phillips–Wallis combination, because the two address unrelated engineering questions. Uchida demonstrates how to split a screen into a content area and a control area—a spatial layout concept that is implemented entirely on the local device with no server involvement. EX2019 ¶100. Phillips already has its own screen layout conventions. Adding Uchida’s layout geometry to Phillips does not introduce the missing server-delivered metadata that dictates *which* operation panel to render; it addresses only *where* on the screen to place content. A POSITA seeking to solve the distinct problem of server-driven panel selection would not have looked to Uchida’s purely local layout approach for an answer. EX2019 ¶¶101–103.

IX. GROUND 4: CLAIMS 8, 9, 18, AND 19 ARE NOT OBVIOUS OVER GROUND 1 AND ELLIS

Ground 4 adds Ellis (EX1014) for claims requiring that the “time related information” is an “appreciation term” (claims 8 and 18) and that the appreciation term is “related to a predetermined date” (claims 9 and 19).

Ground 4 depends on the Phillips–Wallis combination of Ground 1 and fails for all the reasons Ground 1 fails.

Additionally, as Dr. Singh explains, Ellis does not cure the deficiencies of the base references. EX2019 ¶¶104–114. Dr. Bederson relies on Ellis’s disclosure of program expiration dates to satisfy the “appreciation term” limitation. EX1003

¶¶187–198. But in the '091 Patent, an “appreciation term” governs the user’s ability to interact with digital content using interactive operation buttons—it defines a time period during which the interactive operation panel is displayed. EX1001 at 5:46–52; EX2019 ¶105. The appreciation term thus operates at the presentation layer: it directly controls what the user sees on screen during playback. EX2019 ¶105.

As Dr. Singh explains, the '091 Patent’s appreciation term and Ellis’s expiration date operate at entirely different levels of the system and serve entirely different engineering purposes. EX2019 ¶109. The appreciation term is a presentation-layer construct: it governs which operation panel the user sees during playback. The expiration date is a data-layer construct: it governs how long a recording persists on disk before being automatically purged. *Id.* Under the layered architecture model familiar to any software engineer, the presentation layer (what the user sees and interacts with) is logically distinct from the data layer (data storage, persistence, and lifecycle management). *Id.* The appreciation term feeds into the controller—the component positioned between the decoder and the display that performs metadata-driven panel selection. EX2019 ¶110. Upon receiving content together with its related information, the controller evaluates whether the content falls within or outside the appreciation term and renders the corresponding operation panel. *Id.* Ellis’s expiration date, by contrast, feeds into the storage subsystem; when

the date passes, the system deletes the recording from disk. *Id.* Ellis contains no disclosure of the expiration date being routed to a controller for the purpose of selecting an operation panel. *Id.* A POSITA would not have treated these two attributes as interchangeable. EX2019 ¶111.

An analogy underscores why Ellis’s expiration date cannot satisfy the claimed “appreciation term.” A library’s retention policy—“purge overdue items from the catalog after 90 days”—governs when content is removed from storage; it says nothing about how a patron interacts with the item while using it. By contrast, a display rule—“show the full interactive activity set for the first 30 days, then switch to a simplified reading-only display”—governs what the patron sees during use. EX2019 ¶115. Ellis’s expiration date functions like the retention policy: it triggers deletion from disk when a deadline passes. The ’091 Patent’s appreciation term functions like the display rule: it determines which operation panel is rendered during playback. One operates at the data-management layer; the other at the presentation layer. A POSITA would not have treated a storage-lifecycle trigger as interchangeable with a UI-presentation control. *Id.*

Furthermore, Dr. Bederson has not shown a reasonable expectation of success in grafting Ellis onto the Phillips–Wallis combination. Repurposing a storage-lifecycle attribute as a UI-presentation-control attribute is not a minor tweak—it

demands re-engineering a component from one architectural layer to serve a function in an altogether different layer. EX2019 ¶114. Dr. Singh identifies no fewer than four non-trivial steps such a redesign would entail: (1) intercepting the expiration date before it reaches the storage subsystem, (2) redirecting it to the controller, (3) reinterpreting a deletion deadline as a display-window parameter, and (4) building the switching logic that toggles panels based on whether the current time falls within or outside that window. *Id.* Ellis provides no teaching or suggestion for any of these steps; it treats expiration dates exclusively as triggers for cleaning up stored recordings. *Id.* The absence of any disclosure pointing toward these engineering steps forecloses a finding of reasonable expectation of success. *See Intelligent Bio-Systems*, 821 F.3d at 1367–68 (requiring demonstration that a skilled artisan would have had “a reasonable expectation of success” in achieving the combination).

A POSITA would likewise have had no reason to supplement the Phillips–Wallis combination with Ellis’s storage expiration dates, because Ellis operates at an entirely different level of the system. Ellis’s expiration dates are storage-housekeeping attributes that determine when a recording should be deleted to reclaim disk space. EX1014; EX2019 ¶109. They belong to the data-management layer and bear no relation to UI presentation logic. Phillips’s UI, by contrast, operates at the presentation layer. Merging a storage-lifecycle mechanism with a

presentation-layer system to produce the claimed appreciation-term-driven panel switching would demand multiple non-obvious architectural changes—converting a deletion deadline into a display-window parameter and routing it to a controller that chooses between operation panels. A POSITA would not have turned to a storage-management attribute to address a UI-presentation challenge. EX2019 ¶¶109–114.

X. GROUND 5: CLAIMS 8, 9, 18, AND 19 ARE NOT OBVIOUS OVER GROUND 2 AND ELLIS

Ground 5 adds Ellis to the Phillips–Wallis–Logan combination of Ground 2. This ground fails for the combined reasons that Grounds 2 and 4 fail. EX2019 ¶¶115–118.

As Dr. Singh confirms, Dr. Bederson’s reliance on Logan does nothing to remedy the shortcomings of the Phillips–Wallis combination: Logan’s Mini-Nav Bar is a sports-highlight navigation overlay whose provider-configurable timeout amounts to a system-wide display preference—not the content-specific “time related information” the claims demand. EX2019 ¶116. Likewise, Ellis’s program expiration dates are not the claimed “appreciation term”—they function at the storage layer to govern when a recording is purged, not at the presentation layer to control which operation panel appears during playback. EX2019 ¶117. Even if Logan were properly incorporated into the Phillips–Wallis combination (which it is not), the resulting system would still contain no mechanism by which server-

delivered, content-specific time metadata directs the display of operation panels, and Ellis's storage-deletion dates cannot fill that void. EX2019 ¶117.

Moreover, Dr. Bederson offers no standalone motivation-to-combine rationale for the four-reference combination of Phillips, Wallis, Logan, and Ellis—he merely incorporates by reference his reasoning from Grounds 2 and 4. EX2019 ¶118. Dr. Bederson identifies no coherent modification pathway by which a POSITA would: (1) start with Phillips's VoD program guide system; (2) import Wallis's promotional-sequence navigation attributes as panel-selection metadata; (3) add Logan's sports-segment Mini-Nav Bar timeout as content-specific time metadata; and (4) repurpose Ellis's storage-deletion expiration date as a presentation-layer appreciation term. *Id.* Each step in this chain demands an inferential leap that is individually non-obvious, and stacking these leaps only compounds the deficiency rather than resolving it. *Id.*

In providing his obviousness analysis, Dr. Bederson repeatedly gap fills by referring to the knowledge of POSITA. This is legally and factually impermissible. *See K/S Himpp v. Hear-Wear Techs., LLC*, 751 F.3d 1362, 1365-66 (Fed. Cir. 2014). (“We recognize that the Board has subject matter expertise, but the Board cannot accept general conclusions about what is ‘basic knowledge’ or ‘common sense’ as a replacement for documentary evidence for core factual findings in a determination

of patentability.”); *see also* Memorandum from Director Coke Morgan Stewart, Enforcement and Non-Waiver of 37 C.F.R. § 42.104(b)(4) and Permissible Uses of General Knowledge in Inter Partes Reviews at 2 (July 31, 2025). Dr. Bederson’s conclusory reasons to combine these references are deficient because they are not grounded in the teachings of the references but are based on Dr. Bederson’s own speculation.

The four-reference combination of Phillips, Wallis, Logan, and Ellis only magnifies these motivational shortcomings. A POSITA would have had no reason to assemble Phillips’s mode-specific screens, Wallis’s promotional-navigation attributes, Logan’s sports-segment overlay, and Ellis’s storage expiration timestamps into a single system. Each reference targets a different system layer and a different design problem: Phillips provides task-specific user screens; Wallis provides per-item access-control flags for promotional sequences; Logan provides a segment-jumping overlay for recorded sports broadcasts; and Ellis provides storage-lifecycle timestamps for managing disk space. No coherent design rationale links these disparate functions in a way that would lead a POSITA to the ’091 Patent’s server-driven, metadata-governed panel-switching architecture. EX2019 ¶118.

XI. GROUND 6: CLAIMS 1–3, 6–9, AND 14–19 ARE NOT OBVIOUS OVER ELLIS ’430 IN VIEW OF WALLIS

A. No Motivation to Combine

Dr. Bederson's motivation rests on the same high-level assertions used for Ground 1: that both references relate to interactive television systems. EX1003 ¶263. He again asserts that integration would be "a simple and predictable outcome of a condition in an 'if' programming statement." EX1003 ¶266. In providing his obviousness analysis, Dr. Bederson repeatedly gap fills by referring to the knowledge of POSITA. This is legally and factually impermissible. *See K/S Himpp v. Hear-Wear Techs., LLC*, 751 F.3d 1362, 1365-66 (Fed. Cir. 2014). ("We recognize that the Board has subject matter expertise, but the Board cannot accept general conclusions about what is 'basic knowledge' or 'common sense' as a replacement for documentary evidence for core factual findings in a determination of patentability."); *see also* Memorandum from Director Coke Morgan Stewart, Enforcement and Non-Waiver of 37 C.F.R. § 42.104(b)(4) and Permissible Uses of General Knowledge in Inter Partes Reviews at 2 (July 31, 2025). Dr. Bederson's conclusory reasons to combine these references are deficient because they are not grounded in the teachings of the references but are based on Dr. Bederson's own speculation.

As Dr. Singh explains, this rationale is plagued by the same deficiency identified in Ground 1—it lacks specificity and is colored by hindsight. EX2019

¶¶131–133. *See W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1553 (Fed. Cir. 1983) (“[T]o imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher.”). Ellis ’430 is a sprawling disclosure covering PVR-related and program-guide functionality—recording scheduling, storage management, deletion priorities, live television buffering, multi-user profiles, and dozens of distinct overlays and display screens. EX2019 ¶132. Wallis is directed to managing navigation within promotional VoD content sequences, with attributes controlling whether users may skip, bookmark, or jump between promotional clips. *Id.* Neither reference contemplates using server-supplied metadata to select between two types of playback operation panels governed by server-defined time windows. *Id.*

A POSITA would not have been motivated to graft Wallis’s promotional-navigation attributes onto Ellis ’430’s PVR and program-guide system, because the two references are directed to fundamentally different tasks. Ellis ’430 provides a full-featured PVR system with user-triggered overlays—the user invokes browse/flip overlays for live TV or playback controls for recorded content, and the system reacts to user commands. Wallis provides attributes that manage user

navigation through promotional content sequences delivered by a service provider. Combining these references does not produce the claimed architecture, because neither describes a controller that uses server-delivered metadata to choose between two types of operation panels. Ellis '430's overlays are driven entirely by user actions, and Wallis's attributes are access-permission flags for promotional sequences—neither teaches the server-informed, metadata-driven panel selection at the heart of the '091 Patent. EX2019 ¶¶131–133.

Indeed, Ellis '430's own exhaustive disclosure affirmatively undermines the proposed combination. Ellis '430's inventors designed dozens of overlays, dozens of display screens, and dozens of user interaction modes—yet never once described using server-delivered metadata to select between two types of operation panels. EX2019 ¶137. If a POSITA in this field would “obviously” have implemented the claimed architecture, Ellis '430's exhaustive treatment of every other conceivable PVR and program guide feature makes it inexplicable that this particular architecture—which, according to Dr. Bederson, is merely a “simple and predictable outcome of a condition in an ‘if’ programming statement”—was never conceived. *Id.* The proposed combination does not arise naturally from the teachings of Ellis '430 and Wallis; it uses the '091 Patent itself as a roadmap. *Id.*

B. Ellis '430 Does Not Disclose a “Controller”

As a threshold matter, Ellis '430 does not disclose a “controller” as the claims require. Across Ellis '430's entire 174-page disclosure—spanning 126 Figures and 149 claims—the word “controller” does not appear even once. The reference instead describes a set-top box/tuner architecture, with “tuner” used to identify a component whose function is to select among broadcast signals. EX2019 ¶121.

As Dr. Singh explains, this absence is not merely a matter of labeling—it reflects a genuine difference in system design. EX2019 ¶121. Under the Model-View-Controller (“MVC”) paradigm, a standard design pattern well established by 2005, a “controller” accepts input, applies application logic, and selects the view to present. *Id.* The '091 Patent's controller fulfills exactly that role: it ingests server-delivered metadata and uses it to choose an operation panel. Ellis '430's set-top box serves a fundamentally different purpose—it handles remote control commands and routes broadcast signals. EX2019 ¶121. Calling a set-top box/tuner a “controller” does not endow it with the claimed functionality, just as calling a bicycle and an airplane both “vehicles” does not make them structurally alike. The claims demand a controller that alternatively displays two distinct operation panels based on server-delivered “related information” encompassing both time-related and panel-related components. EX2019 ¶122. Ellis '430's set-top box lacks that capability regardless

of nomenclature. *Id.* The functional gap cannot be papered over with a label. Even calling Ellis '430's set-top box a "controller," it still does not receive "related information" that includes time related and panel related components, it still does not use that information to select between two operation panels, and it still does not perform the priority-based, time-governed switching logic that the claims require. EX2019 ¶126.

C. Limitations [1e] Through [1j]

Dr. Bederson maps Ellis '430's browse/flip overlay 260 (Figure 16) as an "interactive content operation panel" and PVR playback overlay 2404 (Figure 39) as a "linear content operation panel." EX1003 ¶¶221–225. As Dr. Singh explains, this mapping is flawed for multiple independent reasons, each of which is independently fatal to Dr. Bederson's analysis. EX2019 ¶¶123–130. First, the two overlays are tied to entirely different user activities involving entirely different content—they are not two operation panels that a controller alternates between in conjunction with the same reproduced digital content. EX2019 ¶¶123–126. Overlay 260 is invoked during live television viewing when the user enters browse or flip mode; it presents program information such as channel options and titles. EX1021 ¶¶0234–0236. Overlay 2404 is invoked during PVR playback of a previously recorded program stored locally. EX1021 ¶0321. A user browsing live TV channels

is engaged in a completely different activity from a user playing back a recorded program. There is no metadata-driven decision point where the system evaluates content attributes and selects one overlay instead of the other for the same reproduced content; the user's own navigation choices—entering browse mode versus selecting a PVR recording—determine which overlay appears. This is user-triggered, not metadata-triggered. EX2019 ¶128. Second, the browse/flip overlay 260 does not send “user-instructions of interactive functions to the outside server” as limitation [1e] requires for the second operation panel—its functions are all local: channel tuning, program browsing, and initiating PVR playback. EX2019 ¶125. The PVR overlay 2404 is likewise strictly local: its buttons—rewind, play, fast-forward, pause, stop—control the flow of video from a recording stored on the local PVR. EX1021 ¶0322. Neither overlay satisfies the claim requirement that one panel sends “user-instructions of interactive functions to the outside server.” EX2019 ¶129. Third, no component in Ellis '430 selects between these overlays based on received “related information.” EX2019 ¶126. The overlay appears when the user presses navigation buttons and disappears “[i]n response to no activity by the user” (EX1021 ¶0289)—the same type of local timeout behavior present in Phillips. *Id.* The PVR playback overlay 2404 appears when the user selects a recording for playback from a PVR recording list and presses play. EX1021 ¶¶0310, 0321. These overlays are

triggered by distinct user actions, not by metadata received from a server. At no point does Ellis '430 describe the system evaluating content-associated metadata and, based on that evaluation, choosing between overlay 260 and overlay 2404 for display with the same reproduced content. EX2019 ¶130.

For limitation [1f], Dr. Bederson identifies program guide schedule times and the browse/flip overlay's availability, but Ellis '430 nowhere states that program times define a period during which the overlay is displayed or that the overlay's presence is governed by "time related information" received from a server. EX2019 ¶127. For limitation [1g], Dr. Bederson concedes that "Ellis'430 does not disclose this limitation" (EX1003 ¶233) and turns to Wallis, but as explained above, Wallis's navigation attributes are not panel-selection metadata. EX2019 ¶128.

For limitations [1i] and [1j], Dr. Bederson again constructs a scenario not found in either reference—suggesting that deactivation of the browse/flip overlay leads to the display of PVR overlay 2404 on the same content, with Wallis's attributes determining which panel appears. EX2019 ¶¶87–88. As Dr. Singh explains, Ellis '430 does not describe this sequence. Overlay 2404 appears in the context of PVR playback, not as a default panel whenever "interactive" overlays are absent. EX2019 ¶¶129-130.

D. Claim 14

Claim 14 requires that both the digital contents and the related information be received “from a video on demand server.” Dr. Bederson nowhere identifies where Ellis ’430 or Wallis discloses a VoD server delivering the claimed time related information or panel related information. EX2019 ¶134. His declaration simply cross-references his analysis of claim 1, which was already deficient. *Id.*

XII. CONCLUSION

For the foregoing reasons, Petitioner has not carried its burden of proving that any challenged claim of the ’091 Patent is unpatentable. Across all six grounds, neither Petitioner nor its expert has shown that the prior art discloses or renders obvious the claimed architecture—a controller that receives “related information” from an outside server, including both “time related information” and “panel related information,” and uses that information to alternatively display linear and interactive operation panels with the reproduced digital contents. This architecture is the central contribution of the ’091 Patent, it was the express basis for the Examiner’s allowance, and it is absent from the prior art. The USPTO’s July 31, 2025 Memorandum reinforces the conclusion that Petitioner’s Grounds fail: because these limitations are not found in any prior art patent or printed publication of record, and because Rule 104(b)(4) prohibits expert testimony, AAPA, common sense, or other

general knowledge from supplying missing claim limitations, the Petition is fatally deficient under 37 C.F.R. § 42.104(b)(4) and 35 U.S.C. § 312(a)(4). Dr. Singh's independent technical analysis of the references and of Dr. Bederson's opinions confirms that Petitioner has not met its burden under 35 U.S.C. § 316(e), and the Board should confirm the patentability of all challenged claims.

Patent Owner respectfully requests that the Board enter a final written decision confirming the patentability of all challenged claims.

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CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. § 42.24(d), Patent Owner certifies that this Patent Owner Response includes 13,127 words, as measured by Microsoft Word, exclusive of the table of contents, index of exhibits, certificate of service, and certificate of word count.

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CERTIFICATE OF SERVICE

The undersigned certifies pursuant to 37 C.F.R. §§ 42.6(e) and 42.105 that on May 29, 2026, a true and correct copy of this Patent Owner Response was served by electronic mail to the attorneys of record, at the following addresses:

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