

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

APPLE INC.
Petitioner

v.

ZIKLAG IP LLC
Patent Owner

Case IPR2025-00700
Patent No. 6,182,128

**DECLARATION OF LOREN C. JOHNSON
UNDER 37 C.F.R. § 1.68 IN SUPPORT OF PATENT OWNER'S
RESPONSE TO PETITION FOR *INTER PARTES* REVIEW**

I, Loren C. Johnson, do hereby declare as follows:

I. INTRODUCTION

1. I am making this declaration at the request of Ziklag IP LLC in the matter of *Inter Partes* Review of U.S. Patent No. 6,182,128 ("the '128 patent") to Kelkar et al.

2. I am not being compensated for my work in this matter. I will be reimbursed for reasonable and customary expenses associated with my work and testimony in this proceeding. I will not be receiving any compensation contingent on the outcome of this matter or the specifics of my testimony.

3. I have been asked to provide my opinions regarding the obviousness analysis offered in the Declaration submitted by Petitioner's expert, Andrew B. Lippman, Ph.D. (Ex.1003). It is my opinion that Dr. Lippman's obvious analysis is flawed in numerous ways and does not demonstrate by a preponderance of the evidence that the subject matter of claims 1-4, 6, 9-14, and 17 ("the Challenged Claims") of the '128 patent would have been obvious to a person having ordinary skill in the art ("POSITA") at the time of the invention, in light of the prior art.

4. In the preparation of this declaration, I have studied:

- a. Dr. Lippman's Declaration (EX1003) submitted by Petitioner in this IPR;
- b. the '128 patent, Ex. 1001;

- c. the prosecution history of the '128 patent (" '128 File History"), Ex. 1002;
- d. U.S. Patent No. 5,132,992 to Yurt et al. ("Yurt"), Ex. 1005; and
- e. U.S. Patent No. 5,732,216 to Logan et al. ("Logan"), Ex. 1006.

5. In forming the opinions expressed below, I have considered: the documents listed above; the relevant legal standards, including the standard for obviousness; and my own knowledge and experience based upon my work in the field of network communications and security as described below, as well as portions of the additional materials Dr. Lippman considered (EX1003, ¶5).

II. QUALIFICATIONS AND PROFESSIONAL EXPERIENCE

6. My complete qualifications and professional experience are described in my *Curriculum Vitae*, a copy of which can be found in EX2008. The following is a brief summary of my relevant qualifications and professional experience.

7. I am an inventor, technologist, and music industry professional with more than thirty years of experience in digital content distribution, networked media systems, and commercial music production. My professional background includes the conception, development, and commercialization of real-time electronic music and video distribution systems beginning in the late 1990s, as well as subsequent leadership roles in media, technology, and immersive audio businesses. My experience spans both technical and operational aspects of distributed media systems.

8. I am a named co-inventor, together with Anand Kelkar, of U.S. Patent No. 6,182,128 B1 (“the ’128 patent”), titled Real-time music distribution system, issued January 30, 2001 from Application No. 09/035,194 filed March 5, 1998. Through my company, Ziklag IP, LLC, I am the sole beneficial owner and controlling assignee of the ’128 patent.

9. I hold an MBA from Baylor University and have founded and led multiple companies at the intersection of entertainment technology, digital distribution, marketing, art, commerce and real-time media delivery. I am a person of skill in the art relevant to the inventions claimed in the '128 patent with more than 30 years of experience building technology-driven media and content-distribution systems.

10. Beginning in the mid-1990s, I was actively involved in the development and deployment of digital music and video distribution technologies. My work focused on real-time and near-real-time electronic delivery of media content at a time when wide-area network bandwidth, latency, reliability, and storage were significant limiting factors. During this period I was involved with (1) commercial internet infrastructure lacked the scalability, reliability, and global performance characteristics commonly assumed today; (2) distributed storage, synchronization across regions, and real-time delivery required bespoke architectural

solutions; and (3) cloud computing, elastic scaling, and content delivery networks were not mature or widely available.

11. I have contributed to more than 100 commercially released album projects as a producer, executive producer, and creative consultant. My work has involved collaboration with major and independent record labels, Grammy Award-winning producers, and internationally distributed artists. My professional activities included: (1) oversight of recording, production, encoding, and delivery workflows; (2) coordination between creative teams and technical delivery systems; and (3) commercial distribution of music and video content at scale.

12. Projects associated with my work have achieved chart success, including multiple iTunes category rankings and a Billboard No. 1 Pop Heatseekers placement, as well as tens of millions of cumulative video views. This experience provided me with direct exposure to the operational realities of digital media distribution and monetization.

13. I am a co-founder of MRSV Media, a company focused on immersive audio technologies and advanced music production. I led the launch of a Dolby Atmos-certified music studio in Nashville, Tennessee, and have worked extensively with immersive and spatial audio formats. As a founder and CEO of MRSV Media, I have produced and delivered more than 200 Dolby Atmos mixes for Grammy-winning and Grammy-nominated artists—including Mariah Carey, Kirk Franklin,

Maverick City Music, Khalid, Owl City, and others—along with mixes for major films and documentaries. Our Dolby Atmos mixes include the Red Clay Strays’ iTunes #1 All-Genre debut album.

14. I have produced or contributed to over 100 commercial album releases, including iTunes #1 chart placements, a Billboard #1, and online video productions with more than 48 million total views. This longstanding hands-on work in the real-time electronic distribution of music and video-on-demand provides me with deep familiarity with the technical and commercial challenges of streaming architectures. My background includes developing cloud-based distribution systems and artist-monetization platforms that reflect the same problems solved by the ’128 patent in 1998.

15. From approximately 2008 through 2018, I was regularly involved in efforts to evaluate and commercialize intellectual property assets related to digital media distribution. During this period, he was represented by third-party intellectual property advisory firms, including Global IP and TEAUS.

16. These firms assisted in preparing technical summaries, evidence-of-use materials, and educational outreach intended to raise industry awareness of relevant technologies and architectural concepts. The activities during this period were focused on explaining technical functionality and system-level concepts to industry participants. Involvement in these efforts further reflects my ongoing engagement

with how distributed media technologies are understood, evaluated, and discussed within commercial and technical environments.

17. In recent years, I have remained actively engaged in professional discussions concerning the evolution of digital content distribution systems, intellectual property protection, and patent review processes, including conversations with industry participants, legal practitioners, and policymakers. These activities are part of my ongoing work in the field and inform my understanding of how distributed media technologies have been evaluated, implemented, and debated over time. This background is provided solely for context regarding my continued involvement in matters relevant to the subject matter of the '128 patent.

18. Based on my experience and education, and professional recognition by various persons and organizations in my field, I believe that I am qualified to offer opinions as to the knowledge and level of skill of one of ordinary skill in the art at the time of the invention of the '128 patent (which I further describe below).

III. INTRODUCTION TO THE '128 PATENT AT ISSUE

19. I have personal, first-hand knowledge of the conception and reduction to practice of the '128 patented invention. Between 1995 and early 1998, Anand Kelkar and I jointly conceived and reduced to practice the system described in the patent. We built working prototypes capable of delivering CD-quality music tracks in real time over existing architectures.

20. The '128 patent addressed a problem unsolved in 1998: how to deliver digital audio content in substantially real time to large numbers of users over existing hybrid fiber-coax cable networks, while simultaneously capturing user-specific selection data for marketing, billing, and personalized recommendations. Prior art systems could not accomplish both real-time playback and the required inter-regional routing and tracking functions.

IV. LEVEL OF ORDINARY SKILL IN THE ART

21. I disagree with Dr. Lippman's definition of a POSITA because his definition is built around “centralized and distributed database systems” and generic “networked file distribution.” In my opinion, the framing Dr. Lippman uses is too narrow and misdirected because the '128 patent is not merely about databases—it is about real-time content delivery over cable/satellite TV networks using independent regional distribution centers coordinated by an active control center.

22. Also, two years of experience in generic networked file distribution does not reasonably reflect the technical realities Dr. Lippman assumes: operational constraints of cable infrastructure, headend/regional topology, and the control-plane behavior required by claims 1 and 2 of the '128 patent.

23. A more appropriate POSITA is someone with experience in: (i) cable/satellite delivery architectures (including hybrid fiber-coax realities); (ii) distributed media delivery systems, and (iii) multi-region orchestration / routing (not

just “storing files in databases”). Employing this definition of a POSITA, Dr. Lippman's proposed "trivial" combinations would not be considered "trivial" at the time of the invention claimed by the '128 patent and would not have been considered plausible to the extent Dr. Lippman suggests or implies.

V. DR. LIPPMAN'S BACKGROUND DISCUSSION

24. Dr. Lippman cites (EX1003 ¶ 32) to a patent application filed in 1996 by Cox Communications supposedly directed towards “providing interactive access to an information source through a television distribution system.” Ex.1008, Abstract. He asserts that this was particularly intended for “providing access to the Internet through a cable television distribution system.” Ex.1008, 1:7-12. Even if the application involves “interactive access” through cable TV distribution, it does not address the specific problems solved by the invention covered by the '128 patent, namely, cross-regional orchestration, per-request library search, and routing files between independent distribution centers under centralized control for substantially real-time sequential playback.

25. Dr. Lippman cites a combination of sources (EX1003 ¶ 33) to string together VOD demos, caching papers, and regional placement concepts to imply obviousness. In my opinion, it is inappropriate to mix these three distinct concepts: (i) caching/replication literature (Karger); (ii) general regional placement/redundancy (Intervu), and (iii) the '128 patent's claimed use of an active central controller that

performs per-request cross-region search and initiates routing between distribution centers. None of the prior art sources cited by Dr. Lippman discloses, teaches or even suggests the '128 patent's active central controller that searches other libraries upon request and initiates file transfers and routing between independent regional networks.

26. Dr. Lippman concludes his background discussion with the assertion that "all of the features and functionality described in this Background were well known in the late 1990s, and a POSITA would have been familiar with them." EX1003 ¶ 35. I disagree with Dr. Lippman's conclusory overstatement. Dr. Lippman has described isolated generic components (servers, databases, networks), while ignoring the relevant question: whether the prior art discloses, teaches or suggests the specific claimed architecture and functions combined in the Challenged Claims of the '128 patent. Indeed, Dr. Lippman's "Background" omits and fails to address the constraints that would have taught a POSITA away from real-time inter-regional routing in that era, including bandwidth allocation realities, latency, and operational instability across distributed cable networks.

VI. DR. LIPPMAN'S OVERVIEW OF THE '128 PATENT

27. In my opinion, Dr. Lippman's overview of the '128 patent presents somewhat of a misleading picture. Although he accurately quotes passages from the '128 patent, the context of those passages is either ignored or underemphasized. For

example, the control center is not passive—it actively determines location, retrieves, and routes requested files. Additionally, the Challenged Claims require independent regional distribution centers coordinated by one control center. Lastly, the claim limitation directed to “substantially real-time” is tied to high-fidelity playback enabled by cable bandwidth and sequential delivery.

28. Dr. Lippman asserts that all the concepts he discusses in the overview of the '128 patent were well known as of the priority date of the '128 patent. EX1003 ¶ 40. I disagree. Dr. Lippman's statement is accurate only from the perspective of a high level of abstraction that simultaneously ignores the specific claim limitations that convinced the Examiner that the subject matter of the '128 patent is patentable.

VII. THE YURT AND LOGAN PRIOR ART

29. I am personally familiar with the Yurt and Logan references that the Petitioner relies on. In 1997–1998, a POSITA would have understood that Yurt teaches bulk download of compressed files transmitted “in a fraction of real time” for later playback. A POSITA would not have understood Yurt as teaching or even suggesting immediate, high-fidelity playback while the file is still arriving, nor would a POSITA understand Yurt as including central controller that actively searches other regional libraries and initiates file transfers between independent distribution centers.

30. Dr. Lippman's component descriptions may be generally accurate (EX1003 ¶¶ 53-58), but the critical point is what Yurt does not disclose, teach or

suggest. Yurt does not teach the claimed substantially real-time sequential transmission enabling immediate playback as described by the '128 patent. Notably, Yurt's "inter-library transfers" are framed as staging/replication (e.g., popularity) not per-request centralized orchestration and routing between independent distribution centers.

31. A POSITA would have understood Logan as teaching a voicemail/personalized advertising system that stores usage logs on a central server. Logan may teach a usage log database for billing/advertising, but it does not teach the combination of : (i) multi-regional distribution centers; (ii) central controller routing between those centers, or (iii) substantially real-time sequential delivery. A POSITA would not have considered Logan as teaching regional libraries, inter-library routing, or any requirement or suggestion of real-time transmission over cable infrastructure.

32. A generic statement in Logan that "other communication schemes may be substituted" does not teach or suggest: (a) independent regional libraries; (b) an active central controller that searches other regions and initiates transfers; or (c) substantially real-time sequential transmission enabling immediate playback.

33. In my opinion, one flaw in Dr. Lippman's analysis is his blurring the difference between (1) Yurt's bulk delivery "preferably in less than real time / fraction of real time," and (2) the '128 patent's claimed "substantially real-time sequential

transmission” that allows playback while the file is still arriving, as reinforced during prosecution.

34. Dr. Lippman provides a number of reasons a POSITA would have been motivated to combine Yurt and Logan. EX1003 ¶¶ 62-73. I disagree with Dr. Lippman's suggestion that the “possible benefit” (tracking popularity/ads) is a sufficient motivation to arrive at the claimed architecture by combining Yurt and Logan. I also take issue with Dr. Lippman's combining the concept of logging with the claimed central controller routing/search/initiation. The Challenged Claims are directed to a specific architecture and control-plane behavior -- not merely logging. The claimed control-plane behavior orchestrates the operation across independent regional libraries and routing of files between distribution centers. Therefore, Dr. Lippman overreaches when he repeatedly characterizes the combination of Yurt and Logan as "trivial" and physical modifications not being required while failing to articulate a credible engineering pathway to achieving the combination.

35. In my opinion, a POSITA would not have turned to Logan to implement Yurt popularity concept. Yurt already tracks popularity internally. Thus, adding Logan-style logs to Yurt does not provide the same subject matter as the Challenged Claims of the '128 patent.

36. A POSITA in 1998 would not have combined a bulk-download system (Yurt) with a voicemail logging system (Logan) to arrive at the multi-regional, real-

time architecture encompassed by the Challenged Claims of the '128 patent. Logan's generic comment about cable links and Yurt's "fraction of real time" delivery do not disclose the '128 patent's claimed architecture. The Yurt and Logan references teach systems that operate in fundamentally different contexts compared to the '128 patent. Neither Yurt nor Logan teaches the active central controller that dynamically searches and orders transfers across independent regional networks required by the claims of the '128 patent.

37. Even if Logan-style logging were added to Yurt, the combination still does not teach or suggest the claim-critical limitations: an active central controller that searches other distribution centers' libraries and initiates routing between distribution centers, and substantially real-time sequential transmission enabling immediate playback.

VIII. KEY CLAIM LIMITATIONS NOT TAUGHT IN THE PRIOR ART

38. None of the prior art asserted against the claims of the '128 patent teach or suggest employing a central controller connected to each distribution center "for routing digital audio data files between said distribution centers" (claim 1), including searching and instructing functions (claim 2).

39. None of the prior art asserted against the claims of the '128 patent teach or suggest employing "sequentially transmitting said requested digital audio files in substantially real time" using cable bandwidth to enable immediate playback.

40. None of the prior art asserted against the claims of the '128 patent teach or suggest employing regional recording of “the digital audio files requested by said user and said user address” for marketing/billing (claims 1 and 14).

IX. THE PROSECUTION HISTORY REBUTS PETITIONER'S
OBVIOUSNESS ARGUMENT BASED ON YURT AND LOGAN

41. In his discussion of the '128 patent's prosecution history (EX1003 ¶¶ 43-47), Dr. Lippman provides selective quotes in an attempt to dilute the significance and impact of key limitations present in the Challenged Claims. He, however, does not meaningfully grapple with how and why those limitations convinced the Examiner that the claims of the '128 patent were allowable over the prior art.

42. During examination, the claims were rejected four times based on Verbiest, Verbiest + McCalley, and Williams, each of which lacked the active central controller and/or real-time sequential transmission that demonstrate the patentable nature of the invention claimed by the '128 patent.

43. In the April 5, 1999 Non-Final Office Action, the Examiner rejected the pending claims as anticipated by Verbiest, which disclosed a video server with its own library connected by a “complex switching network”. Verbiest does not reflect the topology and control-plane behavior of the applicant's claims. Indeed, Verbiest does not disclose, teach or suggest the use of independent regional networks connected to one control center that searches other libraries.

44. In the applicant's August 16, 1999 Response, the claims were amended so as to distinguished over the prior art. Applicant argued that “neither Verbiest nor McCalley distributes files in substantially real time,” and that claimed invention included only one control center connected to independent regional networks. New claim 17 (now issued claim 1) emphasized the active central controller.

45. In the October 1999 Final Office Action, the Examiner asserted the McCalley prior art reference for its hierarchical local/regional operating centers. McCalley’s ROC/LOC hierarchy still does not disclose the claimed central controller functionality: searching other distribution centers’ libraries upon request and initiating transfers and routing between independent libraries. Applicant argued McCalley does not identify a central controller that searches libraries upon request and initiates file transfer. Further, applicant pointed out that neither Verbiest nor McCalley distributes files in substantially real time, particularly “no sequential transmission ... in substantially real time” is disclosed, taught or suggested by either reference.

46. In a January 2000 Advisory communication, the Examiner asserted the Williams prior art reference as an additional ground for rejection of the pending claims under §102.

47. In its March 20, 2000 Response, applicant distinguished the pending claims from the Williams prior art on the basis that Williams requires the requesting

distribution center—not the central controller—to perform file transfers, and because it does not teach “sequential transmission ... in substantially real time.” Applicant stressed that the central controller performs the file transfer—not the requesting distribution center.

48. Thereafter, the Examiner issued a Notice of Allowance (April 10, 2000). The sequence of amendments and arguments shows that the Examiner required the claims to include, and ultimately accepted that the prior art did not disclose, teach or suggest the inventive and nonobvious combination of (1) a central controller actively searching and initiating file transfers across independent regional networks, and (2) substantially real-time sequential transmission. The combination of Yurt and Logan argued by the Petitioner does not disclose, teach or suggest the subject matter claimed by the '128 patent.

49. The prosecution history confirms the precise distinctions over the prior art that Dr. Lippman attempts to erase from the Challenged Claims: (i) an active central-controller; (ii) routing/search/initiation; and (iii) substantially real-time sequential transmission and which the Examiner accepted as grounds for allowance of the '128 patent.

X. CLAIM CONSTRUCTION

50. It is my understanding that in order to properly evaluate the '128 patent, the terms of the claims must first be interpreted. It is my understanding that for the

purposes of this *inter partes* review, the claims are to be construed under the so-called *Phillips* standard, under which claim terms are given their ordinary and customary meaning as would have been understood by a POSITA in light of the specification and prosecution history, unless the inventor has set forth a special meaning for a term. I have also been informed that claim terms only need to be construed to the extent necessary to resolve the obviousness inquiry.

51. Dr. Lippman takes the position that no claim terms require express construction. EX1003 ¶ 48. I do not agree. At a minimum, “substantially real time” requires clarification to ensure that Petitioner does not erroneously equate bulk “fraction of real time” delivery with streaming-like sequential playback. Additionally, “central controller ... for routing ... between distribution centers” (and claim 2’s search/instruction functions) require clarification to avoid Petitioner’s relabeling passive indexing/dispatching as the claimed orchestrator, which creates confusion. Such proper and appropriate claim construction is needed because Petitioner’s obviousness arguments conflates and collapses distinct architectures set out in the Challenged Claims by labeling passive databases as “controllers” and bulk delivery as “substantially real-time.”

XI. SUBSEQUENT INDUSTRY DEVELOPMENTS CONFIRM THE
NONOBVIOUSNESS OF THE '128 PATENT CLAIMS

52. After 2001, major cable operators—including Comcast, Time Warner Cable, Cox, and Charter—implemented distribution systems with regional content servers managed by a national or central catalog controller. Based on my experience in the field, these architectures are substantially similar to the topology described in the '128 patent and embody the same core concepts of regional libraries coordinated by a central server.

53. Likewise, the user-specific logging of requested titles and addresses became foundational for modern personalized recommendation engines used in streaming services across the industry. These developments reflect the technical direction disclosed, taught and claimed in the '128 patent.

XII. CONCLUSION

54. In my expert opinion, informed by my personal work as co-inventor and my continuing technical experience in digital distribution, none of the Challenged Claims of the '128 patent would have been obvious to a person of ordinary skill in the art in 1998. The active central-controller architecture, inter-regional search and routing, and substantially real-time sequential transmission represented a nonobvious solution to long-standing technical barriers in cable-based content delivery systems.

55. I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and that these statements were made with knowledge that willful false statements and the

Declaration of Loren C. Johnson
Inter Partes Review of U.S. 6,182,128

like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code.

Dated: January 4, 2025

A handwritten signature in black ink, consisting of a large, stylized 'L' followed by a series of loops and a long horizontal stroke.

Loren C. Johnson