

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Apple Inc.
Petitioner

v.

ContentGuard Holdings, Inc.
Patent Owner

Case IPR2015-00440
Patent U.S. 6,963,859
Filed January 16, 2003
Issued November 8, 2005
Title: Content Rendering Repository

Attorney Docket No. 20318-134360
Customer No: 22242

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PRELIMINARY RESPONSE OF PATENT OWNER

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Patent Trial and Appeal Board
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, Virginia 22313-1450

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I. INTRODUCTION

Patent Owner ContentGuard Holdings, Inc. (“CG”) respectfully submits this Preliminary Response in accordance with 35 U.S.C. § 313 and 37 C.F.R. § 42.107, responding to the Petition for *inter partes* review (the “Petition”) filed by Apple Inc. (“Apple”) regarding claims of U.S. Patent No. 6,963,859 (“the ‘859 patent”)¹. CG requests that the Board not institute *inter partes* review for several reasons.

The Board has discretion to “deny some or all grounds for unpatentability for some or all of the challenged claims.” 37 C.F.R. § 42.108(b); *see* 35 U.S.C. § 314(a). Apple bears the burden of demonstrating that there is a reasonable likelihood that at least one of the claims challenged in the Petition is unpatentable. 37 C.F.R. § 42.108(c). Although the patent owner is not required to file a Preliminary Response to the Petition (37 C.F.R. § 42.107(a)), CG takes this limited

¹ The ‘859 patent is a member of a family of patents issued to Stefik et al., including 7,523,072; 7,269,576; 7,225,160; 8,370,956; and 8,393,007 (“The Stefik patents”). Each of the Stefik patents has a common parent and share virtually the same disclosure. Apple has also filed two additional petitions for *inter partes* review of the ‘859 patent based on other prior art combinations, as well as 16 other petitions for *inter partes* review of the other Stefik patents, which claim various aspects of Stefik’s DRM system. *See* IPR2015-00441-00458.

opportunity to point out substantive and non-substantive reasons for denying institution of trial.

First, the Petition should be rejected because it fails to sufficiently identify and explain its precise invalidity theories and supporting evidence, in violation of the particularity required by governing statutes and regulations. The Petition fails to specify with particularity where each element of the claims is found in the references and expressly identify the differences between the claims and the prior art in Apple's assertions of obviousness, improperly relying on CG and the Board to discern the differences based on the rest of Apple's Petition. Behind this initial smoke screen lies more obscurity, in the form of conclusory arguments consisting mostly of broad assertions followed by unexplained citations and improper attempts to incorporate extraneous additional argument from a voluminous expert declaration.

Second, the Petition should be rejected because it proposes invalidity grounds based primarily on prior art similar to art previously before the Board and the USPTO. The Petition also asserts horizontally and vertically redundant grounds of invalidity without identifying how one ground improves on any other, violating Board precedent requiring petitioners to identify differences in the proposed rejections. Accordingly, the Board should exercise its discretion and deny the Petition under 35 U.S.C. §§ 315(d) and 325(d) and the redundancy principles

established in *Liberty Mutual Ins. Co. v. Progressive Casualty Ins. Co.*, CBM2012-00003, Paper 7 (Oct. 25, 2012).

Third, the assertions of obviousness based on combining ABYSS with alleged knowledge of persons skilled in the art or with teachings of Denning and Hartrick are mere conclusory statements. Because the Petition fails to provide a persuasive fact-based analysis with some rational underpinning to support these conclusions of obviousness, trial must be denied as to the obviousness theories for this additional reason.

As explained in the Office Trial Practice Guide, the Board “may not authorize a trial where the information presented in the petition, taking into account any patent owner preliminary response, fails to meet the requisite standard for instituting the trial.” 77 Fed. Reg. 48,756-66 at 48,756 (Aug. 14, 2012); *see, e.g.*, 35 U.S.C. §§ 314, 324. CG respectfully submits that the deficiencies addressed herein preclude trial on any grounds asserted in the Petition. It is not possible to fully address the numerous other deficiencies of the poorly articulated and underdeveloped grounds asserted in the Petition. *See Travelocity.com L.P. et al. v. Cronos Techs., LLC*, CBM2014-00082, Paper 12 at 10 (Oct. 16, 2014) (“nothing may be gleaned from the Patent Owner’s challenge or failure to challenge the grounds of unpatentability for any particular reason.”).

II. THE PETITION FAILS TO MEET THE REQUIREMENTS FOR INSTITUTING AN *INTER PARTES* REVIEW

Trial should not be instituted because Apple's Petition does not comply with numerous requirements that must be satisfied.

A. The Petition Fails to Comply with 35 U.S.C. § 312(a)(3) and 37 C.F.R. §§ 42.22(a)(2) and 42.104(b)(4)

Apple's contentions are conclusory and fail to satisfy the requirements of the rules that a petition contain a detailed explanation of the significance of the evidence and identify where each element of each challenged claim is found in the prior art. A petition must identify "in writing and with particularity, each claim challenged, the grounds on which the challenge to each claim is based, and the evidence that supports the grounds for the challenge to each claim[.]" 35 U.S.C. § 312(a)(3). It must also "specify where each element of the claim is found in the prior art patents or printed publications relied upon." 37 C.F.R. § 42.104(b)(4). Similarly, 37 C.F.R. §§ 42.22(a)(2) requires that each petition include "a detailed explanation of the significance of the evidence including material facts, and the governing law, rules, and precedent." The Office Patent Trial Practice Guide cautions that petitioners should "avoid submitting a repository of all the information that a judge could possibly consider, and instead focus on concise, well organized, easy-to-follow arguments supported by readily identifiable evidence of record." *Cisco Systems, Inc. v. C-Cation Techs., LLC*, IPR2014-00454,

Paper 12 at 11 (Aug. 29, 2014) (citing 77 Fed. Reg. at 48,763). The Petition fails these requirements in many respects.

Apple's Petition is virtually impenetrable because it fails to clearly identify where each element of the claim is found in the prior art contrary to 37 C.F.R. § 42.104(b)(4). It presents a summary of the ABYSS system, a brief discussion of digital certificates and signatures mentioned in Denning, and then a conjured up and entirely hypothetical "PKI implementation of ABYSS" consisting of conclusory statements allegedly supported by vaguely identified citations to ABYSS and Denning, and unexplained testimony from its expert declaration. (Pet. at 37-43.) This combination of the references is done without any reference to the claims.

Then, rather than pointing out precisely where the claim limitations are disclosed in the references, the Petition presents conclusory assertions that mimic the language of each claim limitation and refers the reader through overly broad citations to its prior summary and argument and to its expert declaration. (Pet. at 44-59.) The Petition only rarely explains the significance of these citations. They often do not actually support Apple's representations regarding the relevant teachings. Where the Petition does cite the references for support, the citations are overly vague, often citing multiple pages without further guidance. (*See, e.g.*, Pet. at 50: "If the requested use is permitted, the protected processor will permit the

action; otherwise it will deny it. *See* § IV.A.2-4; Ex. 1016 at 38-40, 42-45, 48-50; Ex. 1013 at ¶ C42-43.” (emphasis added).)

Further, rather than articulating what is lacking in ABYSS, and a specific rationale for why ABYSS would have been modified to incorporate the missing elements, the Petition merely asserts that it would be obvious to implement public key techniques in ABYSS and describes incorporating public key encryption into four different elements in the ABYSS system, without stating that any are necessary to rectify elements missing from ABYSS. (Pet. at 37-40.) From the rambling ensuing discussion, the Board and CG can only speculate regarding exactly which claim limitations are being addressed, whether Apple contends that ABYSS discloses the limitation, why the allegedly disclosed elements would nevertheless require modification to arrive at the claimed subject matter, what specific teachings are being combined, Apple’s specific rationale for why a person of ordinary skill would have made the combination, and numerous other aspects of a proper obviousness analysis. (Pet. at 37-43.)

Apple’s above described approach improperly shifts the burden to the Board and CG to discern what particular portions of each reference are being relied upon as meeting the pertinent claim limitations and thereby obscures the actual teachings of the prior art. *See Google Inc. v. Everymd.com LLC*, IPR2014-00347, Paper 9 at 24-25 (May 22, 2014) (denying petition where petition failed to meaningfully

address “the scope and content of the prior art and any differences between the claimed subject matter and the prior art”); *Liberty Mut. Ins. Co. v. Progressive Cas. Ins. Co.*, CBM2012-00003, Paper 7 at 3 (Oct. 25, 2012) (“A petitioner who does not state the differences between a challenged claim and the prior art, and relies instead on the patent owner and the Board to determine those differences based on the rest of the submission in the petition risks having the corresponding ground of obviousness not included for trial for failing to adequately state a claim for relief.”)

The deficiency in Apple’s analysis is compounded by Apple’s practice of citing broadly to portions of the 474-page Declaration of its expert Dr. Alan Sherman. Information contained in exhibits, but not discussed in the Petition, is not incorporated into the Petition. 37 C.F.R. § 42.6(a)(3). The Board has cautioned against the very practice employed by Apple of burying its arguments in an expert declaration. *See Cisco*, IPR2014-00454, Paper 12 at 7-10 (explaining that 250-page expert declaration “serves to circumvent the page limits imposed on petitions for *inter partes* review, while imposing on our time by asking us to sift through over 250 pages of [the] Declaration (including numerous pages of claim charts) to locate the specific arguments corresponding to the numerous paragraphs cited to support petitioner’s assertions.”); *Conopco, Inc. v. Procter & Gamble Co.*, IPR2013-00510, Paper 9 at 8 (February 12, 2014) (“[w]e decline to consider

information presented in a supporting declaration, but not discussed in a petition, because, among other reasons, doing so would encourage the use of declarations to circumvent the page limits that apply to petitions.”)

Almost 200 pages of the Sherman Declaration are directed to the instant petition. (Ex. 1013 at §§ I-V.C; V.D.1, 2, 8; VI.A-D.1; VIII.B.) The Declaration includes discussion regarding the Stefik patents, the construction of the challenged claims, and the disclosures of the asserted ABYSS, Denning, and Hartrick references as they allegedly relate to those claims.² It would be impossible for Apple to explicitly incorporate all of Dr. Sherman’s statements, arguments, and reasoning into its Petition without grossly exceeding the 60 page limit. Accordingly, Apple has incorporated vast portions of the declaration into its Petition by reference. For example, in its two-page argument that ABYSS and Denning teach a “repository” (Pet. at 46-47), Apple collectively cites to paragraphs C1-22, C82-89, C95-103, and C146-170 of the Sherman Declaration, corresponding to approximately 25 pages of testimony.

² The remainder of the Declaration is mostly devoted to other prior art references and other invalidity grounds asserted against the Stefik patents in other pending proceedings.

The Sherman Declaration presents further details of the references and expresses legal theories and arguments well beyond those in the Petition. The Declaration also purports to rely on extrinsic documents regarding the state of the art and other information not discussed in the Petition. Such extensive incorporation by reference amounts to circumvention of the page limit requirement and is proscribed by 37 C.F.R. § 42.6. Apple is not entitled to this unfair advantage, and the Board should not have to study this large volume of material to salvage a petition that does not specify sufficiently exactly where and how each reference discloses the claimed elements. As such, Apple's petition fails to make its arguments accessible and instead requires the Board and CG to "play archeologist with the record." *Cisco*, IPR2014-00454, Paper 12 at 10 (*citing DeSilva v. DiLeonardi*, 181 F.3d 865, 866-67 (7th Cir. 1999)). The Board should disregard the incorporated arguments from the Sherman Declaration.

Apple takes the above-described approach in each of its 19 duplicative and redundant petitions directed to the six related Stefik patents, saddling CG and the Board with the enormous burden of decrypting Apple's obviousness positions. Because the Petition itself fails in numerous respects to adequately identify the supporting evidence and rationale it relies on to challenge specific claim elements, it is deficient and does not support instituting a trial.

B. The Board Should Not Institute Trial Based on the Petition's Redundant Grounds

The Board should reject this Petition because Apple raises grounds that are redundant both internally and in view of the grounds in its related IPR petitions.

“[M]ultiple grounds, which are presented in a redundant manner by a petitioner who makes no meaningful distinction between them, are contrary to the regulatory and statutory mandates, and therefore are not all entitled to consideration.” *Liberty Mut.* CBM2012-00003, Paper 7 at 2. Such redundancies place a significant burden on both the Board and the patent owner, causing unnecessary delay and compromising the ability to complete review within the statutory deadline. *Id.*; see 37 C.F.R. § 42.108. Eliminating redundant grounds streamlines and converges the issues. *Idle Free Sys., Inc. v. Bergstrom, Inc.*, IPR2012-00027, Paper 26 at 4-5 (June 11, 2013). A redundancy analysis properly focuses on whether the petitioner articulated a meaningful distinction of the relative strengths and weaknesses of its application of the prior art to one or more claim limitations. *EMC Corp. v. PersonalWeb Techs., LLC*, IPR2013-00087, Paper 25 at 3-4 (June 5, 2013).

Here, Apple has collectively raised five grounds of unpatentability against the same thirty-three³ challenged claims in three related Petitions, which totals 162 grounds. The Board (and CG) will be burdened by having to consider these redundant grounds in contravention of 37 C.F.R. § 42.1(b).

1. Horizontal redundancies across related petitions merit their denial

Horizontal redundancy exists when a proposed grounds applies “a plurality of prior art references . . . not in combination to complement each other but as distinct and separate alternatives.” *Liberty Mut.*, CBM2012-00003, Paper 7 at 3. The references “provide essentially the same teaching to meet the same claim limitation, and the associated arguments do not explain why one reference more closely satisfies the claim limitation at issue in some respects than another reference, **and vice versa.**” *Id.* (emphasis in original.)

Apple’s grounds, filed serially across these three Petitions are:

Proceeding	Claims	Grounds
IPR2015-00440	1, 3, 5, 8, 13, 15, 16, 19-21, 24, 29, 31, 33, 36, 40, 42, 43, 46-48, 51, 58, 60, 62, 65, 59, 71, 72, 75-77, and 81	103 (ABYSS + Denning); 103 (ABYSS + Denning + Hartrick)
IPR2015-00441	1, 3, 5, 8, 13, 15, 16, 19-	103 (Kahn + Linn)(except 21,

³ Claims 21, 48, and 77 in IPR2015-00441 are challenged only on one invalidity ground.

	21, 24, 29, 31, 33, 36, 40, 42, 43, 46-48, 51, 58, 60, 62, 65, 59, 71, 72, 75-77, and 81	48, and 77); 103 (Kahn + Linn + Dyad)
IPR2015-00442	1, 3, 5, 8, 13, 15, 16, 19- 21, 24, 29, 31, 33, 36, 40, 42, 43, 46-48, 51, 58, 60, 62, 65, 59, 71, 72, 75-77, and 81	103 (Rosen + Hartrick);

Apple relies upon the same Sherman Declaration in support of all three petitions. (Ex. 1013.) Each ground of a given petition is horizontally redundant to the distinct and separate grounds of the other two petitions. For example, the grounds challenging all claims based on ABYSS and Denning are redundant to three distinct grounds challenging the same claims based on Kahn, Linn, Dyad, Rosen, and Hartrick in the combinations shown. Apple inadequately explains which obviousness combination using any of the base references is better (or worse) than the others for any of the challenged claims. (Pet. at 2.) Contrary to the Board's mandate in *Liberty Mutual*, Apple relies on multiple references to provide essentially the same teaching to meet the same claim limitations, and its associated arguments do not explain why one reference more closely satisfies the claim limitation at issue than another reference, and vice versa.

Apple should not be permitted to evade the prohibition against unjustified horizontally redundant grounds through the artifice of spreading them among multiple petitions. Indeed, this tactic only increases the burden on the Board and

the patent owner, as well as the prospect for unnecessary delay, contrary to 37 C.F.R. § 42.108 and *Liberty Mutual*.

Related to this, the Board has discretion to reject a petition when “the same or substantially the same prior art or arguments previously were presented to the Office.” 35 U.S.C. § 325(d). This provision helps avoid serial challenges and the resulting burden on the USPTO in managing multiple proceedings involving the same patent. 157 Cong. Rec. S1041-42 (daily ed. Mar. 1, 2011) (statement of Sen. Kyl). Similarly, the Board has the authority to decline redundant grounds and petitions under 35 U.S.C. § 315(d) in order to “secure the just, speedy, and inexpensive resolution of every proceeding” under 37 C.F.R. § 42.1(b). *See Canon, Inc. v. Intellectual Ventures, LLC*, IPR2014-00535, Paper 9 at 17 (Sept. 24, 2014). Here, Apple’s five grounds (although each applying a distinct combination of references) collectively involve the same seven references, and the teachings relied on from each reference are substantially the same in each combination in which the reference is used. Neither the Board nor CG should be burdened by handling Apple’s duplicative proceedings involving a common set of prior art references and common declarant testimony. The Board should exercise its discretion to deny the Petition for this additional reason. *See, e.g., id.* at 19-20 (denying review on certain proposed grounds in one petition and rejecting two related petitions entirely based upon duplicative nature of arguments across the three related petitions

challenging the same claims of the same patent with different art combinations and the same expert declaration); *SAS Inst. Inc. v. Complementsoft, LLC*, IPR2013-00581, Paper 15 (Dec. 30, 2013) (denying four grounds as substantially similar to grounds based on other prior art and arguments in another IPR), *reh'g denied*, Paper 17 (Feb. 24, 2014) (rejecting argument that page limit requirements prevented petitioner from advancing its most salient grounds in one petition.)

The Petition also relies on prior art previously considered by the USPTO. For this Petition, Apple relies principally on the ABYSS publication (Ex. 1016), which discloses the ABYSS computer architecture developed at IBM. (Ex. 1013 at ¶ A71.) As acknowledged by Apple's expert, the ABYSS publication describes aspects of the same ABYSS system that is disclosed in EP 0268139 ("EP '139") (Ex. 1028), albeit with a different disclosure. (*Id.*) The ABYSS system, as disclosed in EP '139, was already considered by the Board in three previous IPRs (2013-00137, -133, and -139) with respect to the '859, '072, and '576 patents, respectively.⁴ Apple has challenged each of these patents, along with the related

⁴ EP '139 was also at issue in IPR2013-00138 directed to U.S. Patent 7,139,736, another member of the Stefik patent family. Consistently, the Board found that EP '139 does not disclose the claimed repository. *See ZTE Corp. v. ContentGuard Holdings, Inc.*, IPR2013-00138, Paper 57 at 46 (July 1, 2014).

‘956 and ‘007 patents, relying principally on the ABYSS publication. (*See* IPR2015-00443, -446, -449, and -452.)

The Board found in each of the four previous IPRs that EP ‘139 does not disclose specific limitations of the challenged claims. With respect to the claims of the ‘859 patent, the Board found that EP ‘139 does not disclose “the requester mode of operation is operative to request access to content from another distributed repository” as recited in claim 1 or “requesting access to content from another distributed repository,” as recited in independent claims 29 and 58. *ZTE Corp. v. ContentGuard Holdings, Inc.*, IPR2013-00137, Paper 17 at 21 (July 1, 2013). Further, with respect to the challenged claims in the ‘072 and ‘576 patents, the Board found EP ‘139 failed to disclose at least a “document repository” or a “repository” that maintains “behavioral integrity.” *ZTE Corp. v. ContentGuard Holdings, Inc.*, IPR2013-00133, Paper 61 at 28 (July 1, 2014); *ZTE Corp. v. ContentGuard Holdings, Inc.*, IPR2013-00139, Paper 57 at 29 (June 26, 2014). A “repository” or other synonymous claim limitations are required by each of the Stefik patents challenged by Apple, except the ‘160 patent, which is directed to novel aspects of the digital work used in the Stefik system.

Apple argues that the ABYSS publication contains additional teachings not present in EP ‘139. (Pet. at 60.) For example, Apple argues that “ABYSS explicitly describes the feature the Board found to be missing from EP ‘139: that protected

processors can request software and a Right-To-Execute from another processor” and points to the sentence “When a user requests the application . . .” in ABYSS at p. 49. (Pet. at 60.) However, the Board found that similar (and more detailed) disclosures in EP ‘139 were not sufficient disclosures of “a requestor mode of operation” in claim 1 or “requesting access to content from another distributed repository” in independent claims 29 and 58. For example, the Board found the disclosure in EP ‘139 “[a]lternatively, the coprocessor 20 requests a right to execute and software from another computing device in a network of computers” was not a disclosure of the repository “request” limitations of the independent claims. *ZTE*, IPR2013-00137, Paper 17 at 21-22.

As discussed in more detail below, the ABYSS publication has at least the same deficiencies as EP ‘139, including lacking a repository having behavioral integrity or a repository that requests content from another repository. Although the Petition asserts obviousness in view of a secondary reference to Denning and a conditional obviousness ground in view of Hartrick⁵ (Ex. 1021), these references fail to cure the deficiencies of ABYSS. Accordingly, the Board should reject the Petition under 35 U.S.C. § 325(d) for asserting the same or substantially the same

⁵ Hartrick was of record during prosecution of each of the ‘859, ‘072, ‘576, ‘007, and ‘956 patents in the form of its U.S. counterpart 5,532,920. (Ex. 2020.)

prior art or arguments previously presented to the Office. *See Unilever, Inc. v. Procter & Gamble Co.*, IPR2014-00506, Paper 17 at 6-8 (July 7, 2014) (denying petition because it “uses our prior Decision on Institution to bolster challenges that were advanced, unsuccessfully”); *SAS Institute, Inc. v. Complementsoft, LLC*, IPR2013-00581, Paper 15 at 22-23 (Dec. 30, 2013) (denying a petition as to grounds based upon substantially the same prior art and arguments as set forth in a prior IPR petition.).

2. Vertical redundancy within this petition also merits its denial

Vertical redundancy “exists when there is assertion of an additional prior art reference to support another ground of unpatentability when a base ground already has been asserted against the same claim without the additional reference and the Petitioner has not explained what are the relative strength and weakness of each ground.” *Liberty Mut.*, CBM2012-00003, Paper 7 at 12. An example is when a proposed rejection is based on one reference alone while another proposed rejection against the same claim is based on that same reference plus another reference.

The instant Petition includes a vertically redundant ground directed to overlapping groups of claims without any explanation or rationale as to the potential deficiency of one ground relative to another. Apple first advances a purported § 103 rejection using ABYSS and Denning; Apple then argues an

additional § 103 rejection using ABYSS and Denning in view of Hartrick directed to the identical set of claims and limitations. Apple fails to provide a bidirectional analysis of perceived strengths or weaknesses between the redundant grounds. Instead of stating the relative strength and weakness of each ground, Apple merely states that “Patent Owner may argue that ABYSS does not disclose use of a ‘usage rights language.’” (Pet. at 57.) This assertion falls short of the required bidirectional analysis required by *Liberty Mutual*, which stands in stark contrast to this statement’s relying instead on speculation of CG’s position. Such speculation fails to meet Apple’s burden in a redundancy analysis. Given Apple’s failure to follow Board procedures in order to assert this vertically redundant ground, the Board should refuse to consider this redundant ground.

III. OVERVIEW OF U.S. PATENT NO. 6,963,859

A. Mark Stefik is a Pioneer in the Field of DRM Technologies

The invention disclosed and claimed in the ‘859 patent relates to digital rights management (“DRM”) technology. DRM technology manages the use and distribution of digital content, such as e-books, music, and videos.

CG—a spinoff of Xerox Corp.—has been a pioneer and industry leader in the development of DRM technologies for nearly twenty years. As a result of its innovations, CG has been awarded over 300 DRM patents worldwide. (Ex. 2019.) CG commercializes these innovations through a robust licensing program. In the

past decade, CG licensed its DRM technologies to a diverse array of prominent technology companies, with clients and partners including Microsoft, Time Warner, Sony, Xerox, LG, Sharp, Casio, Panasonic, Hitachi, and Toshiba. (*Id.*)

CG's DRM success and industry recognition stems from the work of Dr. Mark Stefik—the '859 patent's first-named inventor—and his colleagues Peter L. Pirolli and Ralph C. Merkle, at the legendary Silicon Valley research facility Xerox PARC.⁶ Although the use of DRM is widespread in today's digital age, in the period leading up to the filing of the application that led to the '859 patent, Internet users were freely distributing and copying content without regard for copyright, and no effective DRM system had been developed. (*See infra* § III.B.) Moreover, there was serious doubt whether publishers would ever be able to control the use and distribution of their digital content. (*See id.*)

Mark Stefik's work at Xerox PARC in the early 1990s fundamentally changed this landscape. Along with his colleagues, he developed a framework for managing the use and distribution of digital content based on trusted systems

⁶ At the time of Dr. Stefik's invention, Xerox PARC was a division of Xerox Corp. known for such innovations as the laser printer, Ethernet, and the mouse. CG spun off from Xerox Corp. in 2000 to further develop the DRM research that Dr. Stefik and his colleagues began at Xerox PARC in the early 1990s.

called “repositories” and “usage rights” that could be associated with the content. (*See infra* § III.C.) This framework allowed content creators to both specify how their works could be used and distributed, even after they had been received by a user, and to continue collecting revenue from these subsequent uses and distributions. (*See infra* § III.C.) Existing DRM systems had not provided publishers with this combination of end-to-end control, flexibility, and revenue potential. (*See infra* § III.B.) As evidenced by the prominent technology companies that CG counts among its clients and partners, Dr. Stefik’s DRM framework continues to be implemented on a wide variety of today’s electronic devices.

B. At the Time of the ‘859 Patent’s Invention, Significant Hurdles Remained in Achieving True Protection for Digital Content

1. Unauthorized copying of digital content was widespread and seen as unavoidable

The application that ultimately led to the ‘859 patent was filed in November 1994.⁷ At that time, recent technological advances led to more content being represented digitally than ever before that presented publishers with a fundamental problem: electronically published content could be nearly perfectly and instantaneously copied and transmitted anywhere in the world at essentially zero cost. (*See Ex. 2016, Stefik, Letting Loose the Light: Igniting Commerce in*

⁷ CG reserves the right to submit evidence establishing an earlier conception and reduction to practice of the invention claimed in the ‘859 patent.

Electronic Publication, in INTERNET DREAMS: ARCHETYPES, MYTHS, AND METAPHORS 219-20 (Mark Stefik, ed., 1996); Ex. 1001 at 1:30-31.)

Consumers were quick to take advantage of this situation. During the early days of CD-ROM distribution (the late 1980s), concerns over copyright and billing for information use began to arise. By 1994, copyright issues for digital works were unsettled and coming to a boil. (Ex. 2016, *Letting Loose the Light* at 219.) The ease with which digital information could be perfectly reproduced and transmitted, combined with the lack of effective DRM technology and the rapid proliferation of internet service providers such as CompuServ and Prodigy, created an environment that promoted rampant copyright infringement. (Ex. 1001 at 1:30-47; Ex. 2016, *Letting Loose the Light* at 219-20.) Moreover, the conventional wisdom among publishers was that unauthorized copying of their works was unavoidable, and that it would never be possible to effectively control the use and distribution of digital content. (Ex. 2016, *Letting Loose the Light* at 219-20 (reciting publishers’ belief that “digital containers for software were inherently leaky vessels and that no viable solution would ever be found”).)

As a result, some publishers would not publish content in digital form, as illicit copying was too big a risk to their business, while others would leave out high-value content to protect their profits. (*See generally id.* at 224-25.) Nascent industries dealing in digital content, such as the personal computer software

industry, faced similar challenges and concerns. Software providers were forced to accept revenue losses from illegal copying, and attempts at billing schemes proved cumbersome. (*See id.* at 225.) In short, with content creators finding themselves uncompensated for the use and distribution of their works, the quality of digital content was in jeopardy. (*See id.* at 226.)

2. Prior attempts to protect digital content were ineffective

The ‘859 patent discusses several then-existing systems for protecting digital content, each of which had significant limitations. Particularly, these systems either failed to prevent users from making unauthorized subsequent copies or transmissions of content or simply precluded subsequent copying and distribution altogether, which prevented publishers from collecting revenue from subsequent uses they would have otherwise allowed for a fee.

For example, schemes existed to distribute software that could only be used upon purchase of a “key.” (*See* Ex. 1001 at 1:65-2:5.) This method was often employed in the context of free “demos” of software products. The user would receive the entire software product along with the demo, but could only use the full product after purchasing the key. (*See id.*) This scheme did not prevent subsequent copying or transferring of the software after it was unlocked by the key.⁸ (*See id.*)

⁸ ABYSS uses a key-based system. (*See infra* § IV.B.1.)

Similarly, existing billing systems lacked the capability to collect revenue from subsequent copies or transfers of digital content. (*See id.* at 3:45-51.) For example, U.S. Pat. No. 4,977,594 by Shear (Ex. 1055) discloses a system for metering and billing for usage of information distributed on a CD-ROM. The system required the addition of a billing module to the user's computer system. But because the billing module was tied to the user's device and not the work itself, any subsequent uses or copies made of the work could not be billed. (*See* Ex. 1001 at 3:45-51.) Other existing billing systems likewise tied the billing mechanism to the user's device and not the work, resulting in the same shortcomings. (*See id.* at 3:19-51.)

On the other hand, some existing systems prevented unauthorized copying and distribution at the expense of revenue generation. For example, VPR Systems Ltd. created a system for controlling the distribution of digital books. (*Id.* at 2:40-43.) Users downloaded books from point of sale kiosks onto their personal storage cartridges and then viewed the books on readers. (*Id.* at 2:40-50.) The system could either be used to sell books or as a library system. (*Id.* at 2:47-55.) In the library configuration, the kiosk limited the number of copies that could be checked out at one time, and downloaded books were erased from the user's cartridge after a certain check out time expired. (*Id.* at 2:54-60.) But a user could never loan downloaded books to other users, because the books downloaded to one user's

cartridge could not be viewed on any other user's reader. (*Id.*) Thus, book publishers did not have the option to permit users to loan or make copies of their works for a fee, or to pay for the right to create derivative works, and consequently lost those potential revenue sources. (*Id.* at 2:61-3:5.)

Other systems imposed restrictive operating conditions. The mechanism disclosed by Griswold in PCT Publication WO 93/01550, entitled "License Management System and Method," (Ex. 2017) allowed users to access licensed products only when coupled to a communications system. (Ex. 1001 at 2:6-35.) There was thus a continued risk that the licensed product would be rendered unusable if communication with the system was severed. (*See id.* at 2:32-40.) Similarly, the system described in U.S. Pat. No. 4,932,054 by Chou et al. (Ex. 2018) allowed a user's computer to run the protected software only when connected to a hardware device known as a "dongle." (Ex. 1001 at 1:57-64.)

In sum, existing DRM systems were not capable of providing the flexibility to allow users to copy, modify, and distribute digital content while at the same time providing mechanisms for honoring the commercial and intellectual property interests of the work's creators. (*See generally* Ex. 2016, *Letting Loose the Light* at 219-22.)

C. Dr. Stefik's DRM System was the First Solution Offering Flexible, Secure, End-to-End, Digital Rights Management

Unlike their contemporaries, Mark Stefik and his colleagues realized it was possible to create a flexible distribution system that both protects *and* compensates content creators. Their system achieves that result through two core concepts. *First*, digital works are stored on and transferred between trusted systems, which the '859 patent calls repositories. *Second*, usage rights can be associated with the digital works stored on the repositories and can determine how works may be used and if they can be further distributed. (*See* Ex. 1001 at 6:3-7.) The '859 patent specification discloses exemplary ways of implementing both concepts.

In general terms, a repository is a trusted system for supporting usage rights. (*See infra* § III.E.2.a-d.) Repositories can be used to govern the use and distribution of digital works. The '859 patent discloses several possible types of repositories. One type may both receive and process requests for access to digital works ("server mode") and initiate access requests ("requester mode"). (*See* Ex. 1001 at 7:4-12.) This type of repository can, for example, be used to determine whether the publisher has placed any conditions on the use or distribution of its works, and whether those conditions are satisfied, before granting the access request. (*See id.* at 29:37-44, 29:61-64, Fig. 1.) A repository may be used in combination with a rendering device (e.g., an e-book reader or video player) to

comprise a system capable of rendering digital works (which broadly include “any audio, video, text, or multimedia work[s]”). (*Id.* at 5:64-6:1, 7:26-31.)

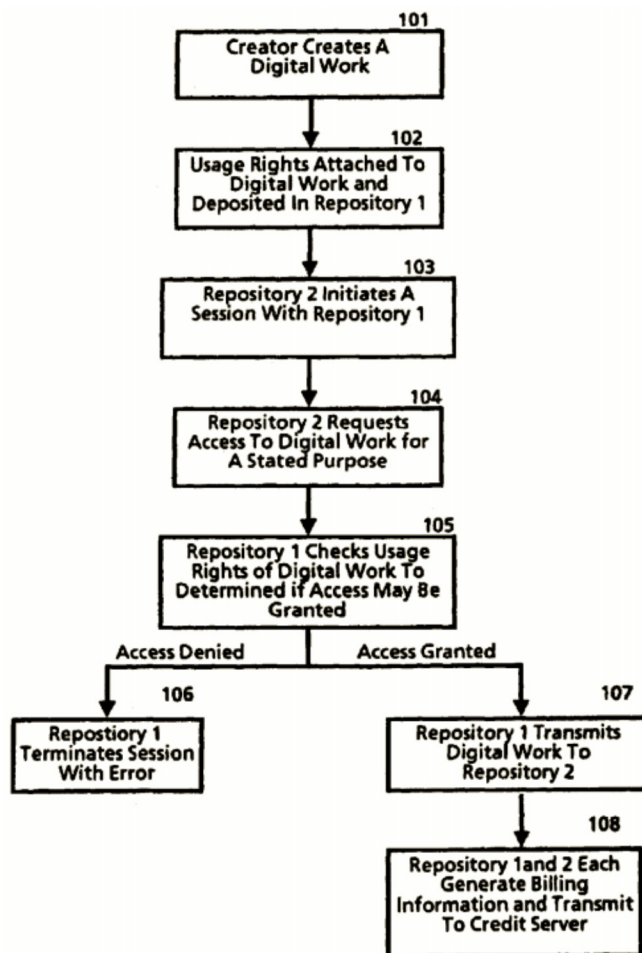
“Many of the powerful functions of repositories—such as their ability to ‘loan’ digital works or automatically handle the commercial reuse of digital works—are possible because they are trusted systems.” (*See id.* at 11:52-55.) In general, trusted systems “are able to take responsibility for fairly and reliably carrying out . . . commercial transactions.” (*Id.* at 11:56-57.) In other words, repositories can prohibit all devices except other repositories from accessing or transferring their works, based on the rules that apply to those works. (*See id.* at 11:62-12:50.) Thus, rules managing how and by whom works could be used and defining the terms on and prices at which users could copy or transfer the works could overcome the prior art’s shortcomings in providing publishers with trusted, flexible protection of their content and proper compensation. In Dr. Stefik’s system, those rules are supplied by usage rights.

In general terms, usage rights can be associated with digital content and “define how a digital work can be used and if it can be further distributed.” (*Id.* at 6:3-7.) Dr. Stefik developed a “usage rights language” as a way to implement these rights. As described in the ‘859 patent’s specification, this exemplary language allows publishers to specify both individual rights and sets of rights. Individual rights include, among many others, the right to print or copy a work at a certain

cost and the right to transfer or loan a work to another repository. (*See id.* at 16:64-17:22, 18:54-19:4.) Sets of rights comprise multiple individual rights and can define both the manner in which the initial recipient may use the work and on what terms she can make subsequent copies or transfers. (*See, e.g., id.* at 24:23- 40.)

Once created, usage rights can be associated with the digital work to which they apply and can continue to control the use and distribution of the work after the work is received by a user's repository. (*Id.* at 6:11-16.) For example, when the usage rights permit the user to subsequently copy the work, the copies will also have the usage rights associated with them. (*Id.*) This allows publishers to ensure that their works are only used as specified by the rights—no matter how extensive a distribution chain the rights contemplate—and that users may be charged at each level of the chain. (*See, e.g., id.* at 43:1-23.)

Figure 1 of the '859 patent illustrates how one embodiment of Dr. Stefik's system utilizes repositories and usage rights to handle a request from one repository to access a digital work stored on a second repository. As shown below, the repository from which access is sought grants access in accordance with the work's usage rights.



(Ex. 1001 at Fig. 1.) Because usage rights remain associated with the digital work to which they apply, this process can be repeated with subsequent requests to transmit the work to a new repository.

In sum, Stefik's DRM system implements usage rights to specify permissible distribution channels and manners of use, and its repositories ensure that no other distributions or uses occur and that publishers receive proper compensation. No previous DRM system had provided this combination of end-to-end control, flexibility, and revenue generation.

D. The ‘859 Patent is Directed to a Rendering System and Method

The ‘859 patent is entitled “Content Rendering Repository.” Its claims are directed to a system and method for rendering digital content in accordance with usage rights that are associated with the content and enforced by a repository. In the broader context of Stefik’s DRM system, the content and usage rights have already been created, and the claims address the operations of a repository that is used to handle requests for access to content and enforce the usage rights associated with the content.

The three independent claims of the ‘859 patent each cover similar subject matter, except that claim 1 is directed to a rendering system, claim 29 to a rendering method, and claim 58 to a “computer readable medium . . . operative to render content.” As an example, claim 1, which is directed to a rendering system comprising a “rendering device” and a “distributed repository,” provides:

What is claimed is:

1. A rendering system adapted for use in a distributed system for managing use of content, said rendering system being operative to rendering content in accordance with usage rights associated with the content, said rendering system comprising:
a rendering device configured to render the content; and
a distributed repository coupled to said rendering device and including a requester mode of operation and server mode of operation,

wherein the server mode of operation is operative to enforce usage rights associated with the content and permit the render device to render the content in accordance with a manner of use specified by the usage rights,
the requester mode of operation is operative to request access to content from another distributed repository, and
said distributed repository is operative to receive a request to render the content and permit the content to be rendered only if a manner of use specified in the request corresponds to a manner of use specified in the usage rights.

Thus, the '859 patent claims key aspects of Stefik's invention: a distributed *repository* that enforces *usage rights associated with content*. These concepts did not exist in the art when Dr. Stefik and his colleagues developed their DRM system. Apple unsurprisingly fails to find a repository that enforces usage rights in the prior art, as will be discussed in greater detail below.

E. Claim Interpretation

1. Legal standards

Because the Stefik patents are expired, or will expire before the Board issues a decision after trial, the correct standard for claim construction is the ordinary meaning, as would be understood by a person of ordinary skill in the art at the time of the invention in view of the specification. *In re Rambus, Inc.*, 694 F.3d 42, 46

(Fed. Cir. 2012); *Square, Inc. v. J. Carl Cooper*, IPR2014-00157, Paper 17 at 2 (June 23, 2014).

2. District Court’s Markman order construing relevant claim terms

On March 20, 2015, the District Court for the Eastern District of Texas issued its claim construction order for the Stefik patents. (Ex. 2001.) This decision, although not binding on the Board, may be instructive. *Facebook et al. v. Software Rights Archive*, IPR2013-00478, Paper 17 at 11 (Feb. 3, 2014). CG proposes that the Board adopt the District Court’s construction where noted.

a. “Repository”

“Repository” means “a trusted system in that it maintains physical, communications, and behavioral integrity in the support of usage rights.” This construction was adopted by the District Court, upon review of the Board’s prior construction and the parties’ arguments. (Ex. 2001 at 15.) CG submits that the Board should adopt this construction for the reasons specified by the Court. (*Id.*)

b. “Physical integrity”

The District Court interpreted “physical integrity” to mean “preventing access to information in a repository by a non-trusted system.” (Ex. 2001 at 18.) CG submits that a construction that replaces “information” with “content” is more appropriate in view of the teachings of the specification where content is the information in a repository that physical integrity is intended to protect. (*See, e.g.,*

Ex. 1001 at 11:63-64: “Physical integrity applies both to the repositories and the protected digital works”; *id.* at 12:4-5: “repositories never allow non-trusted systems to access works directly.”)

c. “Communications integrity”

The District Court adopted the Board’s previous construction of “communications integrity” to mean that the repository “only communicates with other devices that are able to present proof that they are trusted systems, for example, by using security measures such as encryption, exchange of digital certificates, and nonces.” (Ex. 2001 at 18-19.) This construction should be adopted here for the reasons given by the Court.

d. “Behavioral integrity”

The District Court adopted the Board’s previous construction for “behavioral integrity,” i.e., “requiring software to include a digital certificate in order to be installed in the repository.” (Ex. 2001 at 11.) As part of its decision finding claims of the Stefik patents patentable, the Board “[credited] the testimony of the expert witness of ContentGuard, Dr. Goodrich that ‘a person of ordinary skill in the art [in 1994] would [have understood] a digital certificate to be an assurance that downloaded software comes from a reputable source, including a measure of tamper resistance.’” *ZTE Corp. v. ContentGuard Holdings, Inc.*, IPR2013-00137, Paper 58 at 26 (July 1, 2014). Accordingly, CG submits that the Board should

adopt the following construction for “behavioral integrity”: “requires that software that is to be installed in the repository to include a digital certificate, in other words, an assurance that the software comes from a trusted source known to the repository.”

e. “Content”

The District Court construed “content” to mean “the digital information (i.e., raw bits) representing a digital work.” (Ex. 2001 at 23.) CG submits that the appropriate construction is “any work that has been reduced to a digital representation.” This is consistent with the term’s use throughout the specification. (*See, e.g.*, Ex. 1001 at 5:64-66: “Herein the terms ‘digital work’ and ‘content’ refer to any work that has been reduced to a digital representation.”) The Board noted in the previous decision regarding the ‘859 patent that the terms data, content, digital work, and information are used interchangeably. *ZTE*, IPR2013-00137, Paper 17 at 10.

More specifically, Apple’s proposed construction of content improperly imports the term “digital work” and is overly narrow in that introduces “usage right permanently attached to that instance of the digital work.” Apple’s construction improperly reads the glossary definition of digital work including the optional feature regarding “usage rights and fees being attached to the digital work” into construction of content. The intrinsic record including the specification and the

claims fails to establish by clear lexicography or disavowal that the patentee intended to deviate from the plain and ordinary meaning of “content” and redefine it to be the representation of a digital work attached to usage rights and fees.

f. “Usage Rights”

The District Court construed “usage rights” to mean “indications that are attached, or treated as attached, to [a digital work / digital content / content / a digital document] and that indicate the manner in which the [digital work / digital content / content / digital document] may be used or distributed as well as any conditions on which use or distribution is premised.” (Ex. 2001 at 23-33.) Apple asserted in the litigation that the specification’s description of usage rights being “attached” to a digital work required usage rights to be “permanently attached” to the digital work. (*Id.* at 23.) CG argued that “attachment” is a metaphor to explain that rights should be associated with content. (*Id.* at 26-27.) The District Court expressly rejected Apple’s proposal of permanent attachment in favor of the broader phrase “attached, or treated as attached” in its construction. (Ex. 2001 at 33.) The District Court also expressly rejected Apple’s proposal of requiring “statements in a language” in favor of the broader term “indications” based on the disclosure in the Stefik patents of various possible ways of expressing usage rights. (*Id.* at 25-26.) For the same reasons articulated by the District Court, Apple’s proposed construction of “usage rights” should be rejected to the extent it requires

the usage rights to be “statements in a language” that are “permanently attached to one digital work.” (Pet. at 12.) Rather, usage rights need only be “indications” that are “attached, or treated as attached to” (i.e., “associated with”) a digital work. Accordingly, the Board should adopt the District Court’s construction for the reasons stated in the Court’s opinion.

Apple correctly notes in its petition that “data constructs such as encryption keys, digital certificates, and digital signatures that are used by the repository to control access to a digital work or data within are not ‘usage rights.’” (Pet. at 15.)

g. “Manner of use”

CG submits that no construction of this phrase is needed at this preliminary stage in view of the arguments submitted with this response. If the Board does proceed to construe this phrase, CG submits that the proper construction is “a way in which [a digital work / digital content / content / a digital document] may be used.” The District Court partially adopted this construction, but added an unnecessary limitation “as contrasted with a condition that must be satisfied before such use is allowed.” (Ex. 2001 at 45.)

h. “Distributed repository”

A “distributed repository” is simply “a repository adapted for use in a distributed system,” as confirmed by the District Court. (Ex. 2001 at 61.)

i. “Rendering system”

CG submits that no construction is needed for “rendering system” as the claim specifies all necessary limitations of the rendering system, *e.g.*, claim 1 states “said rendering system comprising:”

With regard to the remaining terms of Apple’s proposed constructions, patent owner reserves the right to address the limitations in its responsive brief should trial be instituted.

IV. THE PETITION FAILS TO MEET APPLE’S BURDEN TO SHOW A REASONABLE LIKELIHOOD OF SUCCESS ON ITS INVALIDITY GROUNDS

Inter partes review should not be granted because the Petition does not demonstrate a reasonable likelihood of success on the proposed ground of invalidity. The Petition fails to clearly address the differences between the prior art and the claims; addresses individual claim elements in isolation while failing to give effect to the claims as a whole; presents snippets of the prior art out of context while ignoring the full disclosure of the references; and fails to present any rational underpinning to support conclusions of obviousness.

A. Legal standards

The Petition challenges claims 1, 3, 5, 8, 13, 15, 16, 19-21, 24, 29, 31, 33, 36, 40, 42, 43, 46-48, 51, 58, 60, 62, 65, 69, 71, 72, 75-77, and 81 as invalid as allegedly directed to obvious subject matter.

Under 35 U.S.C. § 103, the question is whether the claimed subject matter would have been obvious to a person of ordinary skill in the art at the time the invention was made. To assess the issue, “the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved.” *Graham v. John Deere Co. of Kan. City*, 383 U.S. 1, 17 (1966). Such secondary considerations as commercial success, long felt but unsolved needs, and failure of others should also be considered. *Id.* at 35-36. The commercial success of the infringer’s product is as relevant as that of the patentee. *Panduit Corp. v. Dennison Mfg. Co.*, 774 F.2d 1082, 1099 (Fed. Cir. 1985).

A reference must be considered for all that it teaches including disclosures that diverge and teach away from the invention at hand as well as disclosures that point toward and teach the invention. *In re Dow Chem. Co.*, 837 F.2d 469, 473 (Fed. Cir. 1988). It is improper to take statements in the prior art out of context and give them meanings they would not have had to a person of ordinary skill having no knowledge of the claimed invention. *In re Wright*, 866 F.2d 422, 426 (Fed. Cir. 1989).

Conclusory allegations regarding obviousness are insufficient to establish a reasonable likelihood of unpatentability in an IPR petition. *Sony Corp. of Am. v. Network-1 Sec. Solutions, Inc.*, IPR2013-00092, Paper 21 at 19, 28 (May 24, 2013)

(Board denied obviousness grounds in petition because conclusory statements that addition of any claim element not disclosed “is a predictable variation that could have been implemented by a person of ordinary skill in the art at the time of the alleged invention” were insufficient.).

Each *Graham* factor must be addressed before a conclusion of obviousness can be reached. *In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Patent Litig.*, 676 F.3d 1063, 1077 (Fed. Cir. 2012); *Intri-Plex Techs. v. St. Gobain*, IPR2014-00309, Paper 83 at 19 (Mar. 23, 2014); *Cisco*, IPR2014-00454, Paper 12 at 13–15 (denying petition’s obviousness grounds). Importantly, the obviousness inquiry must be taken without any “hint of hindsight,” *Star Scientific, Inc. v. R.J. Reynolds Tobacco Co.*, 655 F.3d 1364, 1375 (Fed. Cir. 2011), so as to avoid “reconstruction by using the patent in suit as a guide through the maze of prior art references, combining the right references in the right way so as to achieve the result of the claims in suit.” *In re NTP, Inc.*, 654 F.3d 1279, 1299 (Fed. Cir. 2011) (internal citation omitted).

The Petitioners “must show some reason why a person of ordinary skill in the art would have thought to combine particular available elements of knowledge, as evidenced by the prior art, to reach the claimed invention.” *Heart Failure Tech. v. Cardiokinetix, Inc.*, IPR2013-00183, Paper 12 at 9 (July 31, 2013) (citing *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 418 (2007) (Board denied petition on

patent relating to a device for dividing a human heart chamber because petitioner's bare assertion that prior art related to human heart repair did not amount to "some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness."); *Dominion Dealer Solutions, LLC v. Autoalert, Inc.*, IPR2013-00223, Paper 9 at 19 (August 15, 2013) (Board denied petition on obviousness grounds, stating: "[n]otably absent from [petitioner's] stated rationale is a sufficient explanation of how the references may be combined, from the perspective of one with ordinary skill in the art, to arrive at the claimed invention, and why the proffered combination accounts for all the features of each claim.").

B. The Petition Fails to Demonstrate That the Challenged Claims Are Obvious Based on ABYSS in View Of Denning

1. "ABYSS: A Trusted Architecture for Software Protection"

The ABYSS publication, like the previously considered EP '139, is directed to use of "Rights to Execute" to protect software from unauthorized copying. (Ex. 1016 at 38; Ex. 1028, EP '139, titled "Manipulating rights-to-execute in connection with a software copy protection mechanism.") ABYSS states it is attempting to solve the problem of software copy protection, "especially in the lower end of the market." (Ex. 1016 at 38.) ABYSS's stated solution for this problem to use an authorization mechanism, called a token, to provide authorization to install a Right-To-Execute ("RTE") without direct communication. (*Id.* at 38.)

ABYSS's basic architecture relies on partitioning of software applications into protected and unprotected processes. (*Id.* at 39.) The protected portion of a software application is encrypted and is executed by a physically secure protected processor, which also contains secure memory for storage of RTEs. (*Id.*) A RTE is essentially a decryption key for decrypting the encrypted portion of a software application, which allows an authorized user to access the software. (*Id.* at 40.) Although ABYSS states that RTEs are "conditions under which an application may execute" (*Id.* at 39), ABYSS instead teaches that conditions associated with a RTE place restrictions on the RTE, and not directly on the software itself, as discussed in greater detail below. (*See, e.g., id.* at 40, regarding restriction on transfer of RTE, as opposed to software.) Importantly, the remaining conditions associated with the RTE are enforced by the software content, rather than by the operating software of the protected processor. (*Id.* at 45, 49.)

Each protected processor also executes a supervisor process, which "manages the system's communications resources," "contains a cryptographic facility for managing encryption/decryption keys," and assists in the use of RTEs. (*Id.* at 40.) ABYSS states that the supervisor services can employ either a symmetric cryptosystem or a public key cryptosystem but recommends the use of "a symmetric cryptosystem such as DES, since it is the best match to both the cost and performance requirements of today's lower-end computers." (*Id.* at 43.)

2. “Cryptography and Data Security” by Dorothy Denning (“Denning”)

Denning is a graduate-level general purpose textbook on cryptography and data security. (Ex. 1017 at vi.) As such, Denning is not directed to solving the particular problem of software protection mentioned in ABYSS. Although Denning is cited in ABYSS, as pointed out in the Petition (p. 32), Denning was not cited by ABYSS for any teachings relied upon by the Petition. (Ex. 1016 at 40, citing Denning in regard to an “access-matrix model” with respect to “isolated protection domains”; Ex. 1017 at 192.) While Denning discloses general concepts relating to public key encryption, including digital signatures and digital certificates, Denning provides no guidance or motivation to implement such techniques in the particular system disclosed in ABYSS. Further, were there motivation to combine Denning with ABYSS, simply implementing the “public key techniques” mentioned in Denning in the system described in ABYSS does not cure the deficiencies of ABYSS with respect to the claims of the ‘859 patent, including the failure to disclose the claimed repository.

3. ABYSS in view of Denning fails to suggest a “Distributed Repository”

Each of the challenged claims requires a “distributed repository.” Apple maintains that ABYSS in view of Denning teaches “use of protected processors that are ‘repositories.’” (Pet. at 46.) However, in its discussion comparing the

requirement of a repository to the alleged disclosure of ABYSS, the Petition merely makes conclusory statements about the ABYSS system with overly broad citations to its prior argument and expert declaration for support. The Petition therefore does not clearly point out where the elements of the claimed repository are found in the art and identify which element or elements of a repository are not taught by ABYSS. The closest Apple comes to such identification is in an earlier section: “[w]hile the implementation details [of a public key cryptosystem] are not explicitly discussed in ABYSS, such details, were well-known in the art.” (Pet. at 32.) Apple then discusses the purported teachings of Denning, including a terse description of digital signatures and digital certificates. (Pet. at 32-34.)

Simply using public key encryption techniques does not convert ABYSS’s protected processor into a repository. Instead, a repository must maintain the trinity of physical, communications, and behavioral integrities in the support of usage rights. Each integrity has independent requirements, which when combined, render the system a trusted system that can be relied on to enforce usage rights associated with content. (Ex. 1001 at 11:50-60.) If one of the integrities is missing, the system is not a repository within the meaning of the Stefik patents.

The protected processor of ABYSS alleged by Apple to be the claimed “repository” is deficient in at least behavioral and communications integrities, and the teachings of Denning fail to cure those deficiencies. Further, the protected

processor does not itself enforce usage rights on content, but instead relies on the content itself to perform this task. This represents a significant departure from the paradigm described and claimed in the Stefik patents. Further distinctions from the claims will be discussed in greater detail below.

a. Behavioral Integrity: ABYSS in view of Denning fails to suggest checking for assurance that software to be installed in the repository is from a trusted source in order to install the software in the repository

Apple fails to establish that ABYSS in view of Denning teaches that the protected processor of ABYSS would maintain behavioral integrity including requiring software to include a digital certificate to be installed in the repository as an assurance that the software comes from a trusted source known to the repository. Apple dedicates a single sentence in support of its argument: “a person of ordinary skill implementing ABYSS in view of Denning would have configured the scheme to use digital signatures and digital certificates to validate the authenticity and integrity of an application both before installing and executing it.” (Pet. at 47.) Apple provides no explanation, nor identification of the teachings of the references, in support of this argument, but instead, refers back to multiple full sections of the Petition and incorporates eight paragraphs of the Sherman Declaration. (*Id.*) This approach improperly shifts the burden to the Board and CG to discern the applicable teachings of the references and related reasoning that

supports Apple's naked argument. *See Gracenote, Inc. v. Iceberg Indus. LLC*, IPR2013-00552, Paper 6 at 22 (Mar. 7, 2014).

Even considering the vague citations provided, Apple fails to explain how the referred to sections and expert declaration show that the protected processor of ABYSS requires that software to be installed in the protected processor has a digital certificate as an assurance that the software comes from a trusted source known to the protected processor.

In evaluating EP '139, which describes the same system as ABYSS (*see supra* at § IV.B.1), the Board already concluded that "EP '139's decryption key AK does not meet the requirements of that definition of 'digital certificate.'" *ZTE*, IPR2013-00138, Paper 57 at 46. Apple fails to adequately explain how Denning cures this shortcoming.

For example, Apple's conclusory statement above regarding "validat[ing] the authenticity and integrity of an application" fails to distinguish between system software used to control the functions of the protected processor and software content acted on by the system software. (Pet. at 47.) The relevant software to the behavioral integrity of a repository is "repository software," i.e., the system software that performs the functions of the repository. (*See* Ex. 1001 at 12:40-43: "Behavioral integrity is maintained by requiring that repository software be certified and be distributed with proof of such certification"; 42:9-11: describing

the uninstall transaction to remove software from a repository: “Since uncontrolled or incorrect removal of software from a repository could compromise its behavioral integrity, this step is controlled.”) Stefik teaches that once system software is installed in the repository, it is no longer subject to usage rights and becomes part of the repository to carry out the functions of the repository. (*Id.* at 41:27-31 and 41:66-42:1-4.) ABYSS is silent as to whether its protected processor would require such system software to be installed in the protected processor to have a digital certificate to provide assurance that the software is from a known, trusted source. Accordingly, the Petition fails to show that the protected processor would exhibit this aspect of behavioral integrity.

Lastly, as explained below, ABYSS’s self-enforcing software approach breaches the behavioral integrity requirement. (*See infra* §IV.B.4.) Further, the cited reasoning provided by Apple provides only conclusory assertions in support of its obviousness arguments and unexplained citations to its Expert Declaration. (Pet. at 38-39, 47.) Thus, Apple’s Petition also fails to show that ABYSS’s protected processors, in view of Denning, exhibit behavioral integrity in the support of usage rights.

b. ABYSS in view of Denning fails to teach “repositories” that maintain “communications integrity”

Communications integrity requires that the system “only communicate with devices that are able to present proof that they are trusted systems” in the support of usage rights. Apple asserts that “a protected processor will only transfer an application and its Right-To-Execute to another trusted protected processor using encrypted channels,” citing vaguely to pages 43, 47, and 49 of ABYSS. (Pet. at 46.) At best, ABYSS teaches that protected processors *may* transfer RTEs alone to another protected processor using an encrypted channel. ABYSS, however, does not state that a protected processor *will only* transfer a software application and an RTE to another protected processor using encrypted channels. (*See, e.g.*, Ex. 1016 at 49: stating common supervisor keys “allow secure two-way communication between any two protected processors. This is advantageous for transferring and backing up Rights-To-Execute.”)

Apple then argues that “[b]efore transmitting an application and its Right-To-Execute, a protected processor will verify that the other device is a trusted protected processor” and cites to an earlier petition section and five pages of ABYSS. (Pet. at 46.) It is unclear what portion of ABYSS allegedly teaches verification by a protected processor. The fact that two protected processors *can* communicate using a shared supervisor key does not establish that a protected

processor *will always* verify that the other device is a trusted protected processor before transmitting content or a RTE subject to usage rights. Accordingly, possession of a common supervisor key is not a teaching that ABYSS's protected processors in this context only communicate with other devices that are able to present proof that they are trusted systems.

Apple makes one additional statement in support of its argument: "When implemented using a public key infrastructure, digital certificates are used to establish the secure communication channels." (Pet. at 46.) Apple does not cite directly to either ABYSS or Denning for this statement but invites the Board to dig through three previous sections of the Petition (approx. 7 pages) and seven paragraphs of its Expert Declaration to find the support for this statement. (Pet. at 46.) Even considering the cited portions of the Petition, Apple provides no support for *why* one of ordinary skill would implement ABYSS's teachings using a public key infrastructure, and how this alleged implementation shows that ABYSS's protected processors would *only* communicate with other protected processors that can present proof they are trusted when supporting usage rights. Instead, Apple merely makes conclusory assertions that modifying ABYSS would be "routine" and "a standard use of PKI technology." (Pet. at 37.) These arguments are similarly only supported by unexplained citations to the references and the Expert Declaration. (Pet. at 37-38.) Accordingly, Apple's Petition also fails to show that

ABYSS's protected processors, in view of Denning, exhibit communications integrity in the support of usage rights.

In view of the above, the Petition fails to establish by sufficient articulated reasoning with some rational underpinning that the claimed repository is obvious over ABYSS in view of Denning.

4. Stefik's "repository" enforces "rights" for "content" that are separate from the "repository" itself; thus, ABYSS software's enforcement of its own Right-To-Execute cannot disclose a "repository"

Each of the challenged claims requires a "distributed repository" having a "server mode" that enforces "usage rights." A key distinction between the software protection scheme laid out in ABYSS and the system of trusted repositories described in the Stefik patents is that in the Stefik patents, the repositories themselves enforce usage rights. (*See* Ex. 1001 at 6:17-18: "The enforcement elements of the present invention are embodied in repositories"; 12:16-18: "repositories prevent access to the raw data by general devices and can test explicit rights and conditions before copying or otherwise granting access.") Stefik never describes a repository that enforces rights against itself. In every example, a repository enforces rights associated with content or a work separate from the repository itself. Although a repository may enforce rights against associated software that is to be installed on the repository, after installation that combined

software/repository will only then enforce rights associated with other content – *not* itself. (Ex. 1001 at 42:17-21, 56-61.) The claims themselves confirm this separateness between repositories and the content against which the repositories enforce rights. Because the claims separately recite the claimed “content” and “repository,” they are presumed to have different meanings. *CAE Screenplates Inc. v. Heinrich Fiedler GmbH*, 224 F.3d 1308, 1317 (Fed. Cir. 2000) (“In the absence of any evidence to the contrary, we must presume that the use of these different terms in the claims connotes different meanings.”).

ABYSS, on the other hand, relies on the software works themselves to *self-enforce* their own rights-to-execute while the software is being run. In particular, ABYSS discloses:

- “Should the protected part of the application find that it is being executed contrary to the terms and conditions specified in its Right-To-Execute, it may effectively terminate its own execution.” (Ex. 1016 at 45.)
- “The software vendor can specify terms and conditions under which the application will execute, and **allow the application itself to enforce them**. . . . The application has access to these data [embodying the terms and conditions], and may test the specified conditions against such system facilities as the real-time clock in order to determine if it is being properly used. If it is not, *the application simply refuses to execute*.” (*Id.* at 49.) (Emphasis added.)

- “If the rented application’s Right-To-Execute contains a terminal date, and if *the application* checks this against the real-time clock whenever it is run, the rental agreement is enforced.” (*Id.* at 49.) (Emphasis added.)

As shown above, ABYSS discloses a system in which the software content is executed before any rights to execute are checked, and in which the software content itself determines whether it may be executed. ABYSS’s protected processor merely supplies information (such as the current date or time) that the protected software uses to determine whether its own rendering may continue. (Ex. 1016 at 49.) But the ‘859 claims do not recite that the *content* itself permits content to be rendered in accordance with usage rights. Rather, the claims require that a *repository* make that determination. (Ex. 1001 at 51:34-38.) Accordingly, it is not enough under the claims that the protected processor supply information to the software application that the software application uses in making the rendering determination.

ABYSS’s self-enforcing software paradigm also violates the requirement that the repository exhibit behavioral integrity. As discussed above, behavioral integrity requires that software include a digital certificate as an assurance of its coming from a trusted source to be installed in the repository. If loading and executing the protected software content in the protected processor to allow the software to check its RTE would be considered “installing” software in the

protected processor in the support of usage rights, this would violate the behavioral integrity requirement. As discussed above, the protected processor does not check for any assurance that the software comes from a trusted source known to the protected processor in order to load the protected software. (Ex. 1016 at 45.) Nor is execution of the self-policing software conditioned on the presence of such a certificate. (*Id.*) Accordingly, the protected processor fails the behavioral integrity requirement by allowing the software content to be loaded and executed to check its own RTE.

Apple's arguments that the protected processor determines whether the software can be executed based on the data in the RTE mischaracterize the teachings of ABYSS and accordingly fail to consider the distinctions between the teachings of ABYSS and the requirements of the claimed repository enforcing usage rights on the content. (Pet. at 50.) Therefore, the Petition fails to establish that ABYSS in view of Denning discloses a repository having a server mode of operation.

5. ABYSS in view of Denning fails to suggest a “repository” having a “requestor mode of operation”

Apple fails to establish that the protected processor of ABYSS has a “requestor mode of operation . . . operative to request access to content from another distributed repository” in claim 1 or the similar recitations in claims 29 and

58. Apple argues that “a workstation can request an application and Right-To-Execute from a protected processor hosting a software lending library” and “both workstations and file servers can request an application and Right-To-Execute from a protected processor associated with the software vendor and downloaded [sic] them ‘on demand.’” (Pet. at 50-51.) Apple provides no explanation with these assertions but merely refers to prior sections and to its expert declaration. Neither of these arguments even suggests that the protected processor (the alleged “repository”), as opposed to the workstation generally, makes the request for an application or RTE. This makes sense because ABYSS is silent whether it is the protected processor that makes the request to another protected processor in these examples. (Ex. 1016 at 49, 50.) Apple does not appear to rely on Denning here and accordingly fails to show that the protected processor has a requestor mode of operation as required by the claims.

6. ABYSS in view of Denning fails to suggest a video rendering system for rendering video content

Dependent claims 8, 36, and 65 require that the content comprises “video,” and dependent claims 13, 40, and 69 require that the rendering device comprises a “video system.” Apple provides nothing but conclusory assertions to argue that these claims would be obvious in view of ABYSS and Denning, supported almost solely by citations to its expert Declaration. (Pet. at 52, 53.) These citations are not

sufficiently described in the Petition and therefore amount to improper incorporation by reference. *Conopco*, IPR2013-00510, Paper 9 at 8. Apple does not provide articulated reasoning with some rational underpinning why it would be obvious to configure ABYSS's software distribution scheme to be adapted to handle video content. For example, the video content would have to include software code for the content to check the right to execute to determine whether it is allowed to execute or play further. Apple does not address this issue and points to no evidence from the references themselves that suggest that it would have been obvious to modify the ABYSS system to be configured to be used with video content. Accordingly, Apple fails to establish that claims 8, 13, 36, 40, 65, and 69 are obvious over ABYSS in view of Denning.

C. The Petition Fails to Demonstrate that the Claims are Obvious Over ABYSS in View of Denning and in Further View of Hartrick

The Petition cites Hartrick (Ex. 1021) in combination with ABYSS and Denning as a back-up obviousness argument to be asserted in the case that "Patent Owner may argue that ABYSS does not disclose use of a "usage rights language." (Pet. at 57.) "Usage rights language" is not a limitation of any claims of the '859 patent, and accordingly Apple's reliance on Hartrick for the disclosure of a "usage rights language" in combination with ABYSS and Denning is irrelevant.

D. Secondary Considerations

CG disputes Apple's assertion that there are no secondary indicia of non-obviousness relevant to the challenged '859 patent claims, a representation that could only have been made by ignoring abundant evidence available to Apple, including of its own commercial success practicing the inventions claimed. Because Apple has not demonstrated a reasonable likelihood of success on any grounds of the Petition, and to avoid unnecessary burden on the Board, CG does not submit specific evidence relevant to secondary considerations at this stage.

V. CONCLUSION

For the foregoing reasons, *inter partes* review with regard to the '859 patent should not be initiated. CG notes that this is a preliminary response and reserves its right to supplement the present arguments and/or add new arguments at a later date if the Petition is granted in whole or in part.

Respectfully submitted,
FITCH EVEN TABIN & FLANNERY LLP

Dated: April 15, 2015

By: / Nicholas T. Peters/
Nicholas T. Peters
Registration No. 53,456
ntpete@fitcheven.com

120 South LaSalle Street
Suite 1600
Chicago, Illinois 60603
(312) 577-7000
(312) 577-7007 (fax)

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e), the undersigned hereby certifies that a true copy of the foregoing PRELIMINARY RESPONSE OF PATENT OWNER was served this 15th day of April, 2015, by e-mail upon the following:

Jeffrey P. Kushan
Michael Franzinger
iprnotices@sidley.com
Sidley Austin LLP
1501 K Street, N.W.
Washington, DC 20005

Petitioner has consented to service by electronic means.

Respectfully submitted,
FITCH EVEN TABIN & FLANNERY LLP

Dated: April 15, 2015

By: /Nicholas T. Peters/
Nicholas T. Peters
Registration No. 53,456
ntpete@fitcheven.com

120 South LaSalle Street
Suite 1600
Chicago, Illinois 60603
(312) 577-7000
(312) 577-7007 (fax)

Attachment A

EXHIBIT LIST

Exhibit	Document
2001	<i>ContentGuard Holdings, Inc. v. Amazon.Com, Inc., et al.</i> , Case Nos. 2:13-cv-1112 and 2:14-cv-61, Memorandum Opinion and Order (Dkt. No. 459) (E. D. Tex. Mar. 20, 2015)
2002-2015	RESERVED
2016	Stefik, <i>Letting Loose the Light: Igniting Commerce in Electronic Publication</i> , in <i>Internet Dreams: Archetypes, Myths, And Metaphors</i> 219-20 (Mark Stefik, ed., 1996)
2017	PCT Publication WO 93/01550 to Griswold
2018	U.S. Pat. No. 4,932,054 to Chou et al.
2019	ContentGuard company biography, http://contentguard.com/company/ (last accessed 4/15/2015)
2020	U.S. Pat. No. 5,532,920 to Hartrick et al.
2021	U.S. Pat No. 5,621,797 to Rosen
2022	RESERVED
2023	RESERVED