

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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

v.

COLLISION COMMUNICATIONS, INC.,
Patent Owner.

Case No. IPR2024-01500
U.S. Patent No. 7,463,703

PETITIONERS' PRELIMINARY REPLY

EXHIBIT LIST

Ex.	Description
1001	U.S. Patent No. 7,463,703 (“703 Patent”)
1002	Prosecution History for 7,463,703
1003	Declaration of Dr. Paul Min
1004	U.S. Patent No. 6,826,140 (“Brommer”)
1005	U.S. Patent No. 7,190,743 (“Learned”)
1006	U.S. Patent Pub. No. 2003/0035469 (“Frank”)
1007	U.S. Patent No. 5,905,946 (“Lilleberg”)
1008	U.S. Patent No. 6,898,248 (“ElGamal”)
1009	U.S. Patent No. 5,995,499 (“Hottinen”)
1010	Zha <i>et al.</i> , “Soft-Decision Successive Interference Cancellation CDMA Receiver with Amplitude Averaging and Robust to Timing Errors,” <i>in</i> Proc. IEEE Global Telecommunications Conference, 2001 (GLOBECOM ’01), vol. 2, 2001, pp. 743-747
1011	Sergio Verdu “Computational Complexity of Optimum Multiuser Detection,” <i>Algorithmica</i> (1989)
1012	Verdu, Sergio, “Multiuser Detection,” Cambridge University Press (1998)
1013	Shimon Moshavi, “Multi-User Detection for DS-CDMA Communications,” <i>in</i> IEEE Communications Magazine, Oct. 1996, pp. 124-136
1014	<i>Curriculum Vitae</i> of Dr. Paul Min

I. PO HAS NOT SHOWN THAT § 103(c) APPLIES TO BROMMER

35 U.S.C. § 103(c) only excludes from prior art subject matter “where the subject matter and the claimed invention were, at the time the claimed invention was made, owned by the same person or subject to an obligation of assignment to the same person.” “A patent applicant or patentee urging that subject matter is disqualified [pursuant to § 103(c)] has the burden of establishing that the prior art is disqualified.” MPEP § 2146; *see also Marvell Semiconductor, Inc. v. Intellectual Ventures I LLC*, IPR2014-00552, Paper 79 at 7 (P.T.A.B. Nov. 30, 2015) (“*Marvell FWD*”) (“Patent Owner must overcome [the challenged reference] by establishing that § 103(c) applies to the fact of this case.”). To meet that burden, PO must “establish the date on which the invention of the [’703] patent was made” and “establish that as of that date, both the [’703] patent and [Brommer] were either ‘owned by the same person or subject to an obligation of assignment to the same person.’” *Marvell FWD* at 7-8. PO cannot meet that burden on the current record.

The POPR identifies the invention date of the ’703 patent as the filing date of Provisional Patent Application No. 60/462,657, April 14, 2003. POPR at 32 (relying on the provisional application date); *see also Marvell FWD* at 7 (considering “the date on which the provisional application ... was filed” as invention date). Petitioner does not dispute that as of that date, Brommer was assigned to BAE Systems Information and Electronic Systems Integration Inc. (“BAESI”). EX2011.

PO admits that the '703 patent was not expressly assigned to BAESI until several months *after* the invention date, on November 25, 2003. POPR at 33; EX2012. To establish common ownership under § 103(c), PO argues that named inventor Thomas McElwain (“McElwain”) was under an obligation to assign his inventions to BAESI, or preemptively assigned his inventions to BAESI. POPR at 32. However, PO fails to meet its burden of production on that issue.

PO does not identify any agreement that effected an express preemptive assignment or obligation to assign the invention of the '703 patent to BAESI. PO relies on a non-public Employee Proprietary Information and Innovation Agreement (“EPIIA”) dated September 16, 1996. POPR at 32. However, the EPIIA is between McElwain and *Lockheed Martin Corporation* (“Lockheed”), not BAESI, and only encompasses certain categories of inventions. EX2014. At most, the EPIIA establishes an obligation to assign or preemptive assignment of certain enumerated categories of inventions by McElwain to Lockheed. *See* EX2014. However, PO does not put forward any evidence that the invention of the '703 patent falls with the enumerated categories of “Innovations and Work for Hire” that are the subject of the EPIIA. And even more importantly, PO does not offer any evidence that the EPIIA creates any obligation or assignment between McElwain and *BAESI*.

PO argues that “McElwain’s obligation to assign inventions to Lockheed was transferred to BAE in 2000” by virtue of the acquisition of Lockheed’s Aerospace

Electronics Systems business by BAE Systems North America (“BAENA”). POPR at 31. However, the only evidence PO submits on this issue is a press release announcing the acquisition and a Wikipedia article about BAENA. EX2015, EX2016. Neither document resolves the critical factual questions that PO must resolve to prove that § 103(c) applies here.

First, PO offers no evidence showing that Lockheed assigned the EPIIA to BAESI (or any other BAE entity), or that BAESI (or any other BAE entity) was Lockheed’s successor in interest to the EPIIA pursuant to any agreements governing the acquisition by BAENA. EX2015 and EX2016 only report on the acquisition at a high level of generality, without delineating its terms, and PO does not submit any agreements or other documentation governing the acquisition. Thus, PO lacks evidence that McElwain’s obligations under the EPIIA were transferred to any BAE entity, much less BAESI specifically. Further, the acquisition press release states BAENA would “offer employment” to the former Lockheed employees, suggesting that a transfer of employees (or their EPIIAs) was not automatic. EX2016 at 2.

Second, even if PO could establish that the EPIIA or obligations to Lockheed thereunder were transferred in connection with the acquisition by BAENA, PO offers no evidence that any such transfer was to **BAESI**, rather than the acquiring entity, BAENA. PO also does not submit any evidence that any obligations owed by McElwain to BAENA after the acquisition were assigned or otherwise transferred

to BAESI. To the contrary, the Wikipedia article cited by PO states the former Lockheed division was reorganized into a third entity, BAE Systems Electronics & Integrated Solutions (“BAEE&IS”). EX2015 at 2.

Third, PO does not submit any evidence as to the relationships between the different BAE entities that could permit a finding that an assignment or obligation to assign to BAENA or to BAEE&IS would establish common ownership with BAESI (the undisputed owner of Brommer). *See* MPEP § 2146.02 (inventions of subsidiaries not necessarily “commonly owned” by a parent company, *e.g.*, if a parent company only owns 90% of a subsidiary).

Fourth, PO fails to identify the applicable state law governing the EPIIA (which does not identify the controlling law on its face) or the acquisition, nor does PO cite any authority establishing how the applicable state law would have applied to these facts. *See Marvell FWD* at 11-19 (performing detailed analysis of facts under applicable state law to resolve § 103(c) issue).

PO also argues that the obligation to assign is “confirmed” by the fact that Provisional Patent Application No. 60/462,657 “was filed using the BAE USPTO Customer number and BAE correspondence address.” POPR at 33. However, PO does not provide any authority—and Petitioner is not aware of any—that states that filing a provisional patent application on behalf of a named inventor establishes a legal obligation to assign the underlying invention, or otherwise establishes

“common ownership” under § 103(c). In addition, the provisional application includes the customer number and correspondence address for “BAE Systems,” and does not identify BAESI specifically. EX2013 at 2.

For all of these reasons, PO has not met its burden of proving Brommer and the ’703 patent were commonly owned as of the invention date of the ’703 patent.

II. PO INCORRECTLY CONSTRUES “BANK OF DECODERS”

The POPR relies on a narrow construction of the term “bank of decoders” as “requir[ing] an error correction coding technique” (POPR at 2). PO did not propose this construction (and did not propose construing the term at all) in the co-pending litigation, and it is not supported by the evidence.

Claim 1 of the ’703 patent (the only independent claim) is silent as to error correction. As recited, the bank of decoders need only “produc[e] a plurality of symbol likelihood estimates for each user” and “iteratively fe[e]d back” those estimates to a symbol estimator and joint amplitude estimator. EX1001, cl. 1. Dependent claim 5 further recites that the decoders are selected from among several types of error-correcting decoders, which suggests that independent claim 1 is broader and not limited to error correction.¹

¹ The Petition explains, with supporting testimony from Dr. Min, how the prior art of record renders obvious error-correction decoders in connection with

Although embodiments disclosed in the specification describe error-correcting decoders, as the POPR acknowledges, these embodiments are “exemplary” and do not serve to limit the term “decoder” to error correction. POPR at 21-28 (discussing “exemplary architecture” of the ’703 patent with “error-correcting decoders 130”); EX1001 at 13:28-29 (describing “one embodiment” with “a bank of error correction decoders”). Importantly, PO does not argue that the specification disclaims decoders that do not perform error correction, or otherwise expressly limits the claimed bank of decoders to error correction. And even if PO were to now argue that every embodiment disclosed in the ’703 patent includes error-correction encoders, that would not suffice to limit the claimed “bank of decoders” to error correction. *Thorner v. Sony Comp. Entm’t Am. LLC*, 669 F.3d 1362, 1366-67 (Fed. Cir. 2012) (“It is likewise not enough that the only embodiments, or all of the embodiments, contain a particular limitation. We do not read limitations from the specification into the claims; we do not redefine words.”).

PO’s argument that “any reasonable understanding of a decoder is one that implements an error correction coding approach” (POPR 47) is not predicated on

dependent claim 5. Pet. 46-47, 61. For the same reason, the “bank of decoders” in claim 1 would be rendered obvious even under PO’s erroneous construction.

any intrinsic evidence. PO relies on the declaration of its expert, who states that a “system utilizing error correction coding” must include an encoder and decoder that encode and decode bits using an error correction scheme. EX2001, ¶98. However, PO’s expert reaches this conclusion based on his assumption that the “challenged claims generally concern wireless communication systems.” EX2001, ¶14; *see also id.* ¶¶16-40 (discussing differences between “coded” and “uncoded” wireless communication systems). The claims, however, are not limited to *wireless* communication systems; they broadly encompass systems “for processing *a digital data stream* from multiple users.” EX1001, cl. 1.

Moreover, the fact that wireless systems implementing error correction use encoders and decoders does not mean that decoders are *only* used for error correction. To the contrary, the textbooks that PO and its expert rely on confirm that *other types of decoders* may be used in wireless communication systems. EX2003 at 18-20 (describing “channel decoder” and “source decoder” in a “digital communication link”); EX2004 at 7 (same), 9 (additionally describing a “discrete decoder”). Only “channel decoders” are described as implementing error correction. *See* EX2003 at 18 (“[T]he channel encoder introduces redundancy in a controlled fashion in order to combat errors...”).

Accordingly, PO’s attempt to limit “bank of decoders” to error correction should be rejected, and the term should be given its plain and ordinary meaning.

Respectfully submitted,

Dated: March 7, 2025

By: /s/ James M. Glass

James M. Glass, Reg. No. 46,729

Counsel for Petitioners

CERTIFICATE OF SERVICE

The undersigned certifies that a copy of the foregoing document was served on March 7, 2025 via email directed to counsel of record for Patent Owner at the following addresses:

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