

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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

v.

CELLECT, LLC,  
Patent Owner.

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Case IPR2020-00561  
U.S. Patent No. 6,043,742

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**PATENT OWNER'S SUR-REPLY TO § 325(d) ARGUMENTS**

Petitioner's Reply treats the asserted references completely out of context and ignores the specification that explains the state of the CCD and CMOS imager art. Petitioner never challenges that, at the time of the invention, CCD imagers were the dominant technology and had a CCD pixel array separate from the other components, such as timing and control and image processing in contrast to CMOS imager technology that was emerging at the same time, led by Eric Fossum, and featured on-chip integration of pixel arrays and image processing. *See, e.g.*, Ex. 1001 at 1:30-4:40; *id.* at 2:8:22. Ignoring this context, the Reply treats CCD and CMOS technologies as interchangeable modules – which they are not.

PO recognized the potential of CMOS technology and sought to expand its use into numerous additional applications requiring reduced area imaging devices. With a long history of innovation in medical devices, including endoscopes, Dr. Edwin Adair, a physician based in Denver, Colorado and an inventor of the '742 began obtaining patents that ultimately led to his work with reduced area imaging devices using CMOS image sensors. PO developed and licensed a portfolio covering its reduced area imaging devices. The '742 Patent describes a complete redesign of the conventional CMOS imagers so that components so can be separated and arranged in separate planes, and thus the layout of the device can be customized, including designing smaller and thinner devices, allowing for use in numerous applications.

Using the claim as a model, Petitioner's Reply is rife with hindsight bias, evidenced by Petitioner's mixing and matching of incompatible CCD and CMOS features. For example, Petitioner argues Swift teaches redesigning Fossum's camera-on-a-chip CMOS sensor to have an off-chip image processor Reply at 5. But Swift is completely silent on any such modification and expressly states that a Fossum CMOS sensor be used as understood and consistent with the state of the art. POPR at 30-33. Petitioner, incredibly, attempts to argue that Swift does not use a Fossum sensor, notwithstanding the express reference to Fossum in Swift. Reply at 5. The reason for this is evident—Fossum's CMOS APS was expressly intended for use in a camera-on-a-chip configuration featuring on-chip integration. *See, e.g.,* Ex. 2004; POPR 31-36. The Federal Circuit has long warned against "using the claims 'as a frame,' and taking the 'naked parts of separate prior art references as a mosaic.'" *Knauf Insulation, Inc. v. Rockwool Int'l A/S*, 788 F. App'x 728, 732 (Fed. Cir. 2019).

Moreover, given Swift's complete lack of implementation details to achieve a CMOS implementation with separate, off-chip processing, PO explained how a POSITA would understand Swift's express statement that a CMOS imager could be used, as well as statements that the pixel array can be separate from video processing board, as referring to a CCD device design, which conventionally used separate pixel array as and processing boards. POPR at 31—36; *see also* Ex. 1003 at 83-89 (Adair Decl.), 91-95 (Baird Decl.). This is further reinforced by the fact that security cameras

were still using CCD imagers in 1994 and well into 2007. *See* Ex. 2036 at 224. Petitioner fails to respond to, much less rebut, these facts. Regardless of whether Swift is understood as a CMOS or CCD imager, however, it is cumulative to the art of record. POPR at 30-33. Swift overlaps with Fossum’s CMOS imager design for its CMOS option, and Swift overlaps with Pelchy/Danna for its CCD option. *Id.*

Petitioner now concedes that Ricquier describes on-chip latches and decoders for controlling the release of image signals from the pixel array. Reply at 5-6. Latches and decoders are critical components for controlling the release of image information from the array of pixels, and Petitioner’s arguments that timing and control means is limited to the clock signal, *i.e.*, timing, is wrong for multiple reasons. The claim term itself refers to both timing *and control*. Further, the ’742 Patent explicitly states that “[t]he *information released* from the column or columns *is also controlled* by a series of latches 102, a counter 104 and a decoder 106.” Ex. 1001 (’052) at 13:33-53; *see id.* 13:6-10. Petitioner’s argument that only control circuit 92 is required is wrong and contradicted by the specification which explicitly states that latches, counters and decoders are necessary to control the release of image signals.

Because the Challenged Claims require “timing *and control* means,” and not just timing circuitry, Petitioner cannot ignore that the control circuitry in Ricquier was on-chip, similar to Zarnowski (POPR at 31-35). Further, Petitioner fails to address that Ricquier was a bench-testing device with an external clock was used only for

development purposes. Ex. 1033 at 10-11. Ricquier expressly teaches the goal of placing all components on-chip post-development, teaching away from designing off-chip timing and control circuitry. *Id.* at 11.

Although Petitioner argues that the scope of the art of record was limited (Reply at 2-3), the totality of the prosecution history, including declarations from Adair and Baird, address at least the following issues: CCD devices would not be combined with Fossum's CMOS sensor; CCD devices would not be manufactured on a single plane; and a hallmark of CMOS sensors was on-chip integration. Ex. 1003 at 91-95. Further, the prosecution history thoroughly dealt with CCD references like Pelchy and Danna, which made passing references to CMOS, but only described CCD sensors with separate circuit boards for off-chip circuitry. POPR at 47-49; *see also* Ex. 1003 at 100-18. Here again, it was argued during prosecution that these CCD references could not be combined with Zarnowski or other CMOS sensors. Ex. 1003 at 137-45.

Petitioner incorrectly argues that Harris was only considered during prosecution of the parent '369 and not in the context of the '742 claims. Reply at 1. References are considered for all that they teach and Examiner Rao was familiar with Harris as it was repeatedly considered in PO's portfolio of related patents, including the '742. Ex. 1002 at 176-177. Further, Examiner Rao expressly listed Harris as one of the references considered in the 2004 Office Action. *Id.* at 125. Moreover, Petitioner's argument that Harris was not considered in combination Swift and Ricquier misses the

point of *Advanced Bionics*, which makes clear that when a Petitioner asserts grounds of unpatentability with references not in the prosecution record to create “distinct combination[s] not considered by the Examiner,” the Board’s evaluation must be based on the substance of the combined references via “the totality of the evidence presented” standard. Petitioner seeks to ignore the state of the art and thus less than the totality of the evidence.

Swift and Ricquier are substantially the same as CCD and CMOS references already considered during prosecution such as Pelchy, Danna, and Zarnowski. POPR at 30-36. Petitioner’s combination of Harris with Swift and Ricquier fails for the same reasons because Swift repeatedly states that components are readily available, Ex. 1005 at 16, meaning a CMOS imager using conventional on-chip integration, a hallmark of Fossum’s CMOS sensor, or a CCD sensor which conventionally separated the pixel array from imaging processing similar to references—both of which were considered during prosecution. Thus, the combination of Harris with Swift and Ricquier is not new and is a combination of CCD and CMOS technologies already considered and overcome. Moreover, the Examiner did not fail to recognize the teachings of the references—Petitioner sets forth no explanation to warrant such a conclusion.

At least for the foregoing reasons, the Board should exercise its discretion to deny instituting *inter partes* review of the Challenged Claims.

Respectfully submitted,

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(Case No. IPR2020-00561)

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**CERTIFICATE OF SERVICE**

The undersigned certifies, in accordance with 37 C.F.R. § 42.6(e), that service was made on the Petitioner as detailed below.

*Date of service*      June 29, 2020

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*Documents served*    PATENT OWNER'S SURREPLY TO § 325(d) ARGU-  
MENTS

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