Filed on behalf of Petitioner by:
Michael N. Rader, Reg. No. 52,146
Adam R. Wichman, Reg. No. 43,988
Jie Xiang, Reg. No. Reg. No. 74,068
WOLF GREENFIELD & SACKS, P.C.
600 Atlantic Avenue
Boston, MA 02210
(617) 646-8000 Phone
(617) 646-8646 Fax

Paper No. __

UNITED STATES PATENT AND TRADEMARK OFFICE

_____

BEFORE THE PATENT TRIAL AND APPEAL BOARD

_____

SONY GROUP CORPORATION
Petitioner,

v.

VISIONX TECHNOLOGIES, LLC,
Patent Owner.

_____

Case No. IPR2023-00296
Patent No. 7,867,808

_____

PETITIONER'S REPLY TO PATENT OWNER'S PRELIMINARY RESPONSE

This filing was authorized by the Board in a conference call on May 24, 2023 (transcript at Exhibit 1049).

TABLE OF CONTENTS

I. Nothing in Claim 1 Requires Performing Step [1.e] Before Step [1.f] 1

A. No Exception to the General Rule Applies Here 1

B. These Steps Are Nothing Like Those in *Mformation* 2

C. A Thinned Second Substrate Is Still a Second Substrate 3

D. Sequencing Is Not Justified by a Sole Embodiment 3

II. The Board Should Institute Review 3

TABLE OF AUTHORITIES

CASES

Mformation Techs., Inc. v. Research in Motion Ltd.,
764 F.3d 1392 (Fed. Cir. 2014) 1, 2

Phillips v. AWH Corp.,
415 F.3d 1303 (Fed. Cir. 2005) (en banc) 3

I. Nothing in Claim 1 Requires Performing Step [1.e] Before Step [1.f]

The '808 patent describes "vertical integration" of an image sensor by bonding a "second substrate" containing photodiodes to a "first substrate" containing circuitry. Ex. 1001 (1:47-2:33, 3:3-10, Figs. 7, 8); Pet. 2-7. One side of the second substrate is bonded to the first substrate, while the other side is thinned (*i.e.*, material is removed) to "expose" the photodiode so that it can detect light. Ex. 1001 (4:25-46, Figs. 7-8); Pet. 2-7. Nothing in the specification requires that the bonding and removing operations must occur in a particular order. Likewise, nothing in claim steps [1.e] or [1.f] requires a particular order:

1.e	bonding the first substrate to the second substrate to connect the photodiode to the metal interconnection; and
1.f	removing a lower portion of the second substrate to expose the photodiode,

"As a general rule, unless the steps of a method actually recite an order, the steps are not ordinarily construed to require one." *Mformation Techs. v. Research in Motion*, 764 F.3d 1392, 1398 (Fed. Cir. 2014) (cleaned up).

A. No Exception to the General Rule Applies Here

No "logic or grammar" requires any order. *Mformation*, 764 F.3d at 1398. Unlike steps [1.g.2] and [1.g.1] (discussed Pet., 8-10), [1.f] "removing" does not depend on [1.e] "bonding"; the "bonding" and "removing" steps involve separate, opposing faces of the second substrate. Ex. 1001 (Figs. 7-8); Pet., 2-7.

By contrast, other claim language—beyond [1.g.1] and [1.g.2]—shows PO knew how to require an order of steps when intended. Claim 6 recites "forming a dielectric over the photodiode of the second substrate ***before bonding*** the first and second substrates." PO chose not to impose any sequence on steps [1.e] and [1.f].

Conventional industry practice was consistent with completing step [1.f] "removing" ***before*** step [1.e] "bonding." Iwabuchi, relied upon in the IPR, uses this order in some embodiments. Ex. 1005, [0065], [0150], [0153], Fig. 10G; Pet., 46-47, 50-52. Iwabuchi itself thus refutes PO's order-of-steps construction.

B. These Steps Are Nothing Like Those in *Mformation*

PO's reliance on *Mformation* is misplaced. POPR, 3. In *Mformation*, the claim required "establishing a connection" and "transmitting" information. 764 F.3d at 1394, 1399. The Federal Circuit held that the claim "requires a connection be established before transmission" because otherwise "the separate sub-step for establishing a connection would become superfluous" since "establishing a connection is necessarily encompassed in transmitting a command." *Id.* at 1399. That reasoning has no application here. Step [1.f] "removing" is not a "sub-step" of [1.e] "bonding." Unlike *Mformation*, nothing in "removing a lower portion of the second substrate to expose the photodiode" ([1.f]) renders superfluous (or "necessarily encompasses") any part of "bonding the first substrate to the second substrate to connect the photodiode to the metal interconnection" ([1.e]).

C. A Thinned Second Substrate Is Still a Second Substrate

Contrary to PO's argument (POPR, 4), "removing a lower portion of the second substrate" in step [1.f] does not transform a "second substrate" into something else. Step [1.f] "removing" just leaves a thinner second substrate that still meets [1.e] and can still bond to the first substrate "to connect the photodiode to the metal interconnection" of the first substrate as [1.e] requires.

D. Sequencing Is Not Justified by a Sole Embodiment

The sole disclosed embodiment in the '808 patent specification describes [1.e] "bonding" before [1.f] "removing." But contrary to PO's argument (POPR, 3-7), the mere fact that a disclosed embodiment is ***consistent*** with sequencing steps [1.e] and [1.f] does not justify ***requiring*** an order of steps. *Phillips v. AWH Corp.,* 415 F.3d 1303, 1323 (Fed. Cir. 2005) (en banc) ("We have expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment.") (cleaned up).

II. The Board Should Institute Review

The order-of-steps construction is PO's ***only*** argument against two of three Iwabuchi mappings rendering obvious claim 1 (and claims 2, 4-9). Since claim 1 does not require ordering [1.e] before [1.f], the Board should institute review.

Respectfully submitted,

Sony Group Corporation

By: /Michael N. Rader/

Michael N. Rader, Reg. No. 52,146

WOLF, GREENFIELD & SACKS, P.C.

Date: June 5, 2023

CERTIFICATE OF SERVICE UNDER 37 C.F.R. § 42.6(e)(4)

I certify that on June 5, 2023, I will cause a copy of the foregoing document, including any exhibits or appendices filed therewith, to be served via electronic mail, as previously consented to by Patent Owner, upon the following:

Michael Farjami	mfarjami@farjami.com
Masood Anjom	manjom@aatriallaw.com
Steven Jugle	sjugle@aatriallaw.com
	docketing@farjami.com
	VXT_Sony-AAExternal@aatriallaw.com

Date: June 5, 2023

/Jenni Hibbard/
Jenni Hibbard
Paralegal
WOLF, GREENFIELD & SACKS, P.C.