

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC,
Petitioner,

v.

HEADWATER RESEARCH LLC,
Patent Owner.

Case No. IPR2026-00271
Patent No. 9,491,564

**PETITIONER'S AUTHORIZED REPLY TO PATENT OWNER'S
PRELIMINARY RESPONSE**

PO says that the “software communication bus” in the Petition’s MMS-Rakic combination is missing “specific, non-standard features” needed to meet limitation [1B2], which recites “allowing access to the bus only for software components identified by... access authorization information...” POPR, 12-13. PO’s argument is based on a flawed premise: “that a ‘bus’ by default broadcasts to *all* recipients... even where a transmission is addressed to a particular recipient.”¹ *Id.*, 13 (emphasis in original). PO is wrong. Not all bus implementations “by default broadcast[] to all recipients,” and the Petition *did not rely* on such a bus. Moreover, PO has no credible basis to construe the term “bus” to require such “default” functionality.

I. IN MMS-RAKIC, APPLICATION-SPECIFIC MESSAGES ARE NOT BY DEFAULT BROADCASTED TO ALL APPLICATIONS

PO attacks a strawman. Messages in MMS-Rakic are not “by default broadcast[ed] to all” (POPR, 13) destination applications. Instead, the Petition expressly argued a POSA would “implement[] Rakic’s validation process” in TS-23.140’s system such that “only the intended destination application receives the message.” Pet., 17-18. In MMS-Rakic, a User Agent receives messages “comprising access authorization information including a signature and an ‘application identifier of the destination application’ that allows the User Agent to ‘immediately route[]’ each message *to the one ‘destination application’ (of the device’s multiple)*

¹ Emphasis added herein unless otherwise specified.

‘referred to from the... identifier’” (*id.*, 42, 46-47) via MMS-Rakic’s software bus (*id.*, 27-30, 14-16). If (and only if) the signature of “a received *application-specific* message” is “deemed valid,” the message is routed “*to the identified,*” “*corresponding one*” destination. *Id.*, 30-32, 46-47, 16-19. “[A]ccess to the bus” is thus “allow[ed]... *only* for software components identified,” as required. *Id.*, 31-32.

II. PO’S INTERPRETATION OF THE TERM “BUS” IS UNSUPPORTED

PO’s basis for ignoring the Petition’s argument that messages are each routed *only* to an identified destination application (*e.g.*, Pet., 17-18, 30, 32, 42)—and asserting that MMS-Rakic’s bus “by default broadcasts” messages “to all” applications—is by narrowly construing the term “bus.” POPR, 12-13. PO’s attempt to interpret “bus” so narrowly should be rejected. Nothing in the claim language or the specification (*e.g.*, EX-1001, 42:14-43:44) *requires* a “software bus” to “by default broadcast[]” data to all software components connected to the bus.

Absent intrinsic support for its narrow construction, PO cites an illustration and an accompanying caption from a 1996 dictionary definition of the term “bus.” POPR, 12-13. PO’s illustration shows a *hardware* bus connected to *hardware* devices—*e.g.*, processor, memory—and not a “software bus,” which PO’s own definition distinguishes. EX-2008, 4 (“Buses are generally hardware, although software can be designed and linked via a so called ‘software bus.’”). Nothing in PO’s illustration of a hardware bus suggests that a *software* bus—*e.g.*, variant of a

D-bus (Pet., 15-16, 27-28; EX-1001, 43:21-31)—also “by default broadcasts” data to all software components. *Cf.* EX-1049, 3 (citing a 2001 definition of a “software bus” and describing it as being for “transferring... data *from one process to another* [process]” instead of *to all other processes*). *Even if* PO’s definition supported PO’s narrow reading, extrinsic evidence “may not be used to vary or contradict the claim language” or “contradict the import of other parts of the specification.” *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1584 (Fed. Cir. 1996).

PO’s argument that the claims require “specific, non-standard features” that (1) prevent a bus from “transmit[ting] data to all connected components” (POPR, 12) and (2) “disallow other software components from accessing the bus” or “the message once it is placed on the bus” (*id.*, 14, 16) is thus premised on unsupported claim narrowing. *See also id.*, 18 n.1. “[L]imitations not appearing in the claims cannot be relied on for patentability.” *Texas Instruments v. Parkervision*, IPR2024-00934, Paper 54 at 50 (Nov. 21, 2025). As the Petition demonstrated, for claim 1, MMS-Rakic’s device link agent *only* accesses the bus when a message is deemed valid and includes a valid signature, and instead of broadcasting the message, the device link agent *only* routes the message “for” (and directly to) the “component[] identified by the [message’s] access authorization information.” Pet., 17-18, 31-32, 46-47. This meets [1B2]’s “allowing access” limitation. *Id.* PO’s unduly narrow interpretation of “bus” is not a credible basis to vaguely require more.

Date: July 21, 2026

/Anant Saraswat/

Anant Saraswat, Reg. No. 76,050

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

I certify that on July 21, 2026, a copy of the foregoing document, including any exhibits filed therewith, is being served via electronic mail, as previously consented to by Patent Owner, upon the following:

Reza Mirzaie
Marc A. Fenster
Dale Chang
James A. Milkey
Neil Rubin
Philip X. Wang

rmirzaie@raklaw.com
mfenster@raklaw.com
dchang@raklaw.com
jmilkey@raklaw.com
nrubin@raklaw.com
pwang@raklaw.com
rak_headwater@raklaw.com

Date: July 21, 2026

/MacAulay Rush/
MacAulay Rush
Paralegal
WOLF, GREENFIELD & SACKS, P.C.