

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD., GOOGLE LLC,
and SAMSUNG ELECTRONICS AMERICA, INC.,
Petitioners,

v.

HEADWATER RESEARCH LLC,
Patent Owner.

Case IPR2024-00341
Patent 8,406,733 B2

PATENT OWNER'S RESPONSE TO THE PETITION

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PATENT OWNER'S EXHIBIT LIST

No.	Description
Ex. 2001	Declaration of Dr. Michael C. Brogioli in Support of Patent Owner's Response
Ex. 2002	<i>Curriculum vitae</i> of Dr. Michael C. Brogioli
Ex. 2003	October 25, 2024 deposition transcript of Dr. Patrick Traynor
Ex. 2004	Microsoft Computer Dictionary (5th ed. 2002) (definition of "client")

I. Introduction

All challenged claims require, *inter alia*, a plurality of device agents “communicatively coupled to [a] service control device link agent through an agent communication bus.” The Petition alleges that this requirement would have been obvious in view of TS-23.140 (Ex. 1004, which is a standards document for the “MMS” protocol). *See* Pet. 28-31. The Petition maps the “MMS User Agent” (which TS-23.140 defines as a software application) to the claimed “service control device link agent” (Pet. 28), and maps destination applications to the claimed “plurality of device agents” (Pet. 28-29).

However, the Petition’s assertion that an “agent communication bus” would have been used is based on either a misunderstanding or misrepresentation of TS-23.140’s disclosure. Specifically, the Petition contends that some sort of agent communication bus would be necessary or at least beneficial because the MMS User Agent purportedly needs to transmit data to *external* destination applications. *See* Pet. 29 (alleging that “MMS is ‘used to transport data specific to applications’ residing on the end-user device that are not the MMS User Agent”). But TS-23.140 is clear that the destination applications “reside on [the] MMS User Agent” itself, such that they are *part of* the MMS User Agent, and no agent communication bus

would be necessary or obvious to route data *within* the MMS User Agent. Ex. 1004, 54.

Petitioner misinterprets TS-23.140’s teaching that the destination applications are part of the MMS User Agent, by alleging that “MMS User Agent” to mean “device.” For example, the Petition asserts:

“MMS may be used to transport data specific to applications” “other than the MMS User Agent” which also “reside on [the] MMS User Agent [device].”

Pet. 6 (quoting Ex. 1004, 54). The Petition’s allegation that “MMS User Agent” means “device,” however, is directly contrary to TS-23.140’s *definition* of “MMS User Agent” as an “*application residing on a UE* [i.e., a device],” rather than the device itself. Ex. 1004, 14 (definition of “MMS User Agent,” emphasis added).

With the *correct* understanding that the destination applications “reside on [the] MMS User Agent” (Ex. 1004, 54), the Petition presents no theory as to how an “agent communication bus” would have been obvious in view of TS-23.140. As explained further herein, because the destination applications (i.e., the alleged “device agents”) are part of the MMS User Agent (i.e., the alleged “service control device link agent”), an agent communication bus would not have been obvious.

II. Overview of the ’733 Patent

At a high level, the ’733 patent is directed to an end user device (e.g., a mobile

phone) that comprises components for communicating with a network system. The device includes, for example, “a plurality of device agents communicatively coupled to [a] service control device link agent through an agent communication bus” such that the service control device link agent can route message content received from the network system over the agent communication bus using a “device agent identifier.” Ex. 2001 (declaration of Dr. Michael C. Brogioli), ¶33. Claim 1 is representative and recites:

1. An end-user device comprising:

a modem for enabling communication with a network system over a service control link provided by the network system over a wireless access network, the service control link secured by an encryption protocol and configured to support control-plane communications between the network system and a service control device link agent on the end-user device;

a plurality of device agents communicatively coupled to the service control device link agent through an agent communication bus, each of the plurality of device agents identifiable by an associated device agent identifier; and

memory configured to store an encryption key, the encryption key shared between the service control device link agent and a service control server link element of the network system;

wherein the service control device link agent is configured to:

receive, over the service control link, an encrypted agent message from the service control server link element,

using the encryption key, obtain a decrypted agent message, the decrypted agent message comprising a particular agent identifier and message content for delivery to a particular device agent of the plurality of device agents, the particular agent identifier identifying the particular device agent, the message content from a particular server of a plurality of servers communicatively coupled to the service control server link element, and

based on the particular agent identifier, deliver the message content to the particular device agent over the agent communication bus.

Ex. 1001, claim 1. Claim 30 is similar in many respects, but recites a “method performed by an end-user device.” Ex. 1001, claim 30.

III. Level of Ordinary Skill in the Art

The Petition proposes that a POSITA in the field of the '733 patent “would have had (1) at least a bachelor’s degree in computer science, electrical engineering, or a related field, and (2) 3-5 years of experience in services and application implementation in communication networks. Additional graduate education could substitute for professional experience, and vice versa.” Pet. 2 (citations omitted).

Patent Owner believes that this stated level of skill is too vague. For example, it is unclear why Petitioner proposes “3-5 years of experience,” when three years of experience already qualifies a person as a POSITA under the Petition’s definition. And the Petition’s proposal that “[a]dditional graduate education... could substitute for professional experience, and vice versa” also lacks clarity. *See Nespresso USA, Inc. v. K-Fee Sys. GmbH*, IPR2022-01574, Paper No. 9 (PTAB Apr. 10, 2024) (“As for [the contention] that ‘[a]dditional education might substitute for some of the experience, and substantial experience might substitute for some of the educational background,’ we find that this characterization is too vague.”).

For purposes of this response, Patent Owner agrees that a person having a bachelor’s degree in computer science, electrical engineering, or a related field, plus at least three years of experience in services and application implementation in communication networks qualifies as a POSITA. The three years of additional experience can be in either a professional setting or a research setting. Ex. 2001, ¶¶29-31.

IV. Claim Construction

The Petition does not propose construction of any term in this proceeding. Pet. at 1-2. Patent Owner agrees that no formal claim construction is necessary, because all terms carry their plain and ordinary meaning.

V. The Petition fails to show unpatentability of any challenged claim.

The Petition’s invalidity theory for all challenged claims relies on a combination of TS-23.140 (Ex. 1004) with the “Ogawa” reference (Ex. 1005). For the requirement of “a plurality of device agents communicatively coupled to the service control device link agent through an agent communication bus,” the Petition relies solely on TS-23.140. *See* Pet. 28-31 (not citing Ogawa, Ex. 1005 in support of this requirement).

As explained below, the Petition cannot show that TS-23.140 discloses or renders obvious this requirement.

A. Overview of the Petition’s Theory

In TS-23.140, the Petition maps the “MMS User Agent” to the claimed “service control device link agent” (Pet. 28), and maps destination applications to the claimed “plurality of device agents” (Pet. 28-29). For context, TS-23.140 defines “MMS User Agent” as an “application residing on a UE [user equipment], MS or an external device that performs MMS-specific operations on a user’s behalf and/or on another application’s behalf.” Ex. 1004, 14; *see also id.* 18 (“The MMS User Agent resides on a UE, an MS or on an external device connected to a UE/MS. It is an

application layer function that provides the users with the ability to view, compose, and handle MMs (e.g., submitting, receiving, deleting of MMs).”).

The Petition does not allege that TS-23.140 *explicitly* discloses an “agent communication bus.” *See* Pet. 30 (acknowledging that “TS-23.140... does not describe ‘[d]etails of these applications or how an MMS User Agent... would interface with them’) (quoting Ex. 1004, 54). Instead, the Petition alleges that a “POSITA would have understood that the MMS User Agent and other applications *would* interface ‘through an agent communication bus,’” or alternatively that “a POSITA would have had reason to implement communications between the MMS User Agent and the device’s other applications to occur over a bus.” Pet. 30 (emphasis added).

As explained in the following sections, neither of these theories succeeds, because the destination applications are disclosed as being *part of* the MMS User Agent in TS-23.140, and a POSITA would not have found it necessary or obvious to use a “bus” for communications that occur internally *within* an application. *See* Ex. 2001 ¶¶35-50; *id.* ¶37 (“[B]uses in computing are typically used to route things *outside* of a given application, not *internal* to an application (e.g., to subparts or subapplications within that application.”).

B. In TS-23.140, the destination applications are subapplications of the broader MMS User Agent application.

As explained by Dr. Brogioli, a POSITA would understand that in TS-23.140, the destination applications are not external to the MMS User Agent, but instead “reside on [the] MMS User Agent.” Ex. 2001, ¶¶38-48; Ex. 1004, 54 (“*Applications that intend to transport application specific data using MMS may either reside on an MMS User Agent or on an MMS VAS Application.*”) (emphases added). Furthermore, a POSITA would have understood that for an application to “reside on an MMS User Agent” means that the application is a “subapplication” or “subpart” within the MMS User Agent application. Ex. 2001, ¶¶38, 45-48.

Notably, in the context of this same sentence, Dr. Traynor took the exact same view of what it means for an application to “reside on” another application. *See* Ex. 2003, 28:6-30:11 (testifying that if an application “reside[s] on the VAS application” that means that “this larger VAS application could have multiple *subapplications*,” and would have “*subparts* for specific” functionality such as “games” (emphases added)).¹

¹ Dr. Traynor appears to contend that for an application to “reside on an MMS User Agent” does not actually mean that it is a subapplication within the larger MMS User Agent, and instead simply means that the application resides on the user *device*. *See* Ex. 1003 ¶51; Ex. 2003, 30:13-31:22. However, Dr. Traynor’s testimony is not credible in this regard because it is inconsistent with his

Accordingly, the destination applications “reside on [the MMS User Agent]” such that are “subapplications” or “subparts” of the MMS User Agent. *See* Ex. 2001 ¶¶37-48. As explained in the following section, the MMS User Agent would not use a “bus” to communicate data to these destination applications because they are *part of* the MMS User Agent such that no “bus” would be necessary or desirable.

C. It would not have been obvious for the MMS User Agent to use a “bus” to communicate data to the subapplications residing on the MMS User Agent.

As explained by Dr. Brogioli, it would not be obvious to use an “agent communication bus” to route data from the MMS User Agent to the various destination subapplications residing on the MMS User Agent, because “buses in computing are typically used to route data *outside* of a given application, not *internal* to an application (e.g., to subparts or subapplications within that application).” Ex. 2001, ¶37. Furthermore, each of the examples of a “bus” provided by Petitioner’s expert are used for communications that are *external* to an

explanation of how “reside on” is used in that same sentence as applied to VAS Applications, and assumes without support that the TS-23.140 specification uses the defined term “MMS User Agent” “imprecisely” within Section 7.1.18. *See* Ex. 2001 ¶¶39-48 (discussing why Dr. Traynor’s allegation that “MMS User Agent” means “device” rather than “MMS User Agent” is incorrect).

application, rather than for communications that would occur *within* an application.
Id.

Rather than use a “bus” for communication within the MMS User Agent in TS-23.140, a POSITA would have instead known that data would be directed to the appropriate subapplication via “standard function calls, such as UpdateAppData(AppID, AppData), which would simply write the AppData to a memory location within the subapplication of the MMS User Agent identified by the AppID. Ex. 2001, ¶38. Accordingly, “there would be no need or desire to use an agent communication bus to transfer data within the MMS User Agent to the appropriate subapplication.” Ex. 2001, ¶¶49-50.

Furthermore, Dr. Traynor’s opinion that TS-23.140 renders obvious an “agent communication bus” is not credible, because Dr. Traynor incorrectly assumes without evidentiary support that when TS-23.140 teaches that the destination applications “reside on an MMS User Agent,” it does not mean what it says. *See* Ex. 1003, ¶51 (alleging that “MMS User Agent” in this context refers to a “device” or a “UE,” despite the term being defined in TS-23.140 as referring to an *application* rather than a *device*); Ex. 2001 ¶¶41-48 (explaining in detail why Dr. Traynor’s opinion that “MMS User Agent” refers to a “device” is inconsistent with both TS-23.140 and Dr. Traynor’s deposition testimony).

Only by ignoring TS-23.140's teachings that the destination applications are subapplications or subparts of the MMS User Agent can the Petition and Dr. Traynor justify their obviousness theory regarding an "agent communication bus," because the Petition has not alleged, and could not show, the obviousness of using a communication bus to manage data *within* a given application. For example, the Petition provides no evidence whatsoever that a POSITA would have found it obvious to use an "agent communication bus" to manage data flow *within* the MMS User Agent, as the Petition's obviousness theory in view of TS-23.140 would require.

VI. Conclusion

TS-23.140 is explicit in teaching that destination applications in an MMS-enabled device "reside on [the] MMS User Agent" application, a fact that the Petition and Dr. Traynor attempt to disregard by conclusorily asserting that "MMS User Agent" in this context actually refers to a "device" rather than the actual definition of "MMS User Agent." This teaching of TS-23.140 is fatal to the Petition's theory because a POSITA would not have found it obvious to use a communication bus to manage data *within* the MMS User Agent application.

Accordingly, the Petition fails to show the obviousness of "a plurality of device control agents communicatively coupled to the service control device link

agent through an agent communication bus” as recited by all challenged claims, and all challenged claims should be found not unpatentable.

Date: November 1, 2024

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CERTIFICATION REGARDING WORD COUNT

Pursuant to 37 C.F.R. §42.24(d), Patent Owner certifies that there are 2,322 words in the paper excluding the portions exempted under 37 C.F.R. §42.24(a)(1).

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CERTIFICATE OF SERVICE (37 C.F.R. § 42.6(e)(1))

The undersigned hereby certifies that the above document was served on November 1, 2024, by filing this document through the Patent Trial and Appeal Case Tracking System as well as delivering a copy via electronic mail upon the following attorneys of record for the Petitioners:

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