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.,

SAMSUNG ELECTRONICS AMERICA, INC.

AND BANK OF AMERICA, N.A.

PETITIONER,

v.

WARD PARTICIPATIONS B.V.,

PATENT OWNER.

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PGR2022-00007
Patent 10,992,480

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PATENT OWNER'S SUR-REPLY TO PETITIONER'S REPLY TO PATENT OWNER'S RESPONSE

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EXHIBIT LIST

Paper 21 - Petitioner's Reply to Patent Owner Response

Exhibit 1006 - U.S. Patent No. 7,082,615 (Ellison)

Exhibit 2009 - (Operating Systems, Design and Implementation)

Exhibit 1008 – W0 01/93212 A2 (Muir)

I. INTRODUCTION

Patent Owner Ward Participations B. V. (Patent Owner) submits this sur-reply to Petitioner Samsung Electronics Co., Ltd.'s reply to Patent Owner's response.

For reasons discussed herein and previously presented, claims 1-19 of U.S. Patent No. 10,992,480 ("the '480 Patent") have written description support and are patentable over the prior art of record and should be declared valid in the Final Written Decision in the instant matter.

The burden of proof in this matter is on the Petitioner. That the Patent Owner may elect to not respond to every single assertion or argument advanced by Petitioner is in no way a concession that such assertion or argument is meritorious.

II. The claims of the '480 Patent have written support

The written description requirement of § 112 is a "possession" test. It requires a patentee to "describe the invention sufficiently to convey to a person of skill in the art that the patentee had possession of the claimed invention at the time of the application, *i.e.,* that the patentee invented what is claimed." *LizardTech, Inc. v. Earth Res. Mapping, Inc.*, 424 F.3d 1336, 1345 (Fed. Cir. 2005). The "test requires an objective inquiry into the four corners of the specification from the perspective of a person of ordinary skill in the art." *Ariad*, 598 F.3d at 1351.

Petitioner argues that elements of Patent Owner's claims are disclosed in different embodiments within the '480 patent and that the claims of the '480 patent

therefore lack written description. Paper 21, p.2 ("embodiments cannot be mixed to satisfy the written description even if obvious to do so…"). Petitioner cites *Intuitive Surgical, Inc. v Ethicon LLC, IPR2019-01110, Paper 30 at 11-15 (Nov. 20, 2020)* to support its argument. *Intuitive Surgical* does not, however, stand for the proposition that [teachings of] "embodiments cannot be mixed." Indeed, in *Intuitive Surgical* the Board noted that the standard is that the disclosure must convey with reasonable clarity to one skilled in the art that the inventors possessed the invention claimed, not that all features come from an individual embodiment ("we agree with Patent Owner that a single embodiment with all the features of the claims is not required to satisfy the written description requirement…"). *See id* at 12.

Patent Owner has previously set forth ample explanations for why a person of skill would understand that the claimed features of the '480 patent have written support and will not repeat them here. The nub of Petitioner's argument in Petitioner's sur-reply is that claimed elements are drawn from different embodiments. This argument, however, lacks merit, as described above.

On page 4 of the Reply, Samsung states "In related remarks, Ward contradicts its above-noted position that the secure part of the BIOS may be any other secure location in the device. POR, 13-14. For instance, on page 15 of its response, Ward argues that "'any other secure location' is a 'secure storage location' not in the BIOS

but shielded from the operating system by the BIOS." POR, 15; SAMSUNG-1032, ¶11."

Petitioner ignores Patent Owner position in the POR, 16; SAMSUNG-1032, "Since the written description of '422 application support[s] that "any other secure location" can shut off the access of the operating system/user of the electronic device by the BIOS, '422 application does not need to describe any alternative for shutting off the access of the operating system/user of the electronic device to storage locations other than by means of the BIOS to support "any other secure location in said electronic device."

Therefore, the '422 application contains an adequate written description of "providing a private key in a memory of said electronic device, wherein said memory being a secure part of a Basic In Out System or any other secure location in said electronic device," as required by claim 1.

Petitioner's position is inconsistent with common Operating System technology as can be readily concluded from Exhibit 2009, pgs. 26-27, where it is explained that if a process is running a user program in user mode and needs a system service such as reading data from a file, it has to execute a trap or a system call instruction to transfer control to the operating system, where the operating system figures out the calling process *by inspecting parameters.* This section of Exhibit 2009 then continues that a read system call has three parameters: the first one

specifying the file, the second one specifying the buffer and the third one specifying the number of bytes to read. And then concludes that if the system call cannot be carried out, *due to an invalid parameter*, the count is set to -1 and the error number is put is a global variable *errno.*

In the ’480 Patent the operating system is not enabled to generate the required parameters specifying the file and specifying the number of bytes to be read, as the operating system is denied access to “said memory” and moreover the private key is encrypted with a key, inaccessible by the operating system, whereby the operating system *by consequence* simply lacks information of the number of bytes of the encrypted private key and the read system call cannot be carried out. This is a direct consequence of standard operating system technology at the filing date and does not involve any BIOS shielding in any way.

Furthermore, Petitioner’s position is contrary with standard and largely applied computer technology at the filing date, that is, appending Application Program Interfacing (‘API’s’) that establish direct connection between computer programs, as is described in Samsung 1008, pg., 7: “In one embodiment, the smart card infrastructure may be a Microsoft® PC/SC - CAPI smart card infrastructure, or a PKCS#ll infrastructure. Alternatively, computing system 110 may support other types of security infrastructures by adding the appropriate top level application programming interface (API), for example to replace PKCS#ll.

And subsequently in SAMSUNG 1008, pg. 9: "In one embodiment, virtual smart card driver 155 receives a request from a user through application 120. Virtual smart card 151 processes the request and sends a result to application 120."

From SAMSUNG 1008 it follows that by appending API's the user application can directly request Virtual Smart Card 151 to process the request and send the result to the user application. In particular, these disclosures in Muir regards the direct handling of a digital signing request, the processing and the return thereof between the User Application 120 and the Virtual Smart Card 151 on the basis of appending an API. Again, this standard computer technology does not involve any BIOS shielding in any way.

III. Claims 1, 3, 6, 11, 14-19 of the '480 Patent Are Patentable Over Ellison and Muir

A. Petitioner's Characterization of the claimed Operating System is Incorrect

Petitioner incorrectly (solely) maps Ellison's OS 12 to the operating system of claims 1, 16-18 of the '480 Patent. See Petitioner's Reply, 17-25. Ellison recites "FIG. 1A is a diagram illustrating a logical operating architecture 50 according to one embodiment of the invention. The logical **operating architecture 50 is an abstraction** of the components of **an operating system and the processor**." SAMSUNG-1006, Col. 2, lines 62-65. The Abstract of the Ellison recites, "The OS

nub is part of the operating system." *See* SAMSUNG-1006, Abstract. That is, even a cursory review of FIGS. 1A-C as well as FIG. 2 (see below) and their discussion in Ellison demonstrate that the operating system of Ellison is not narrowly tailored in the manner suggested by Petitioner.

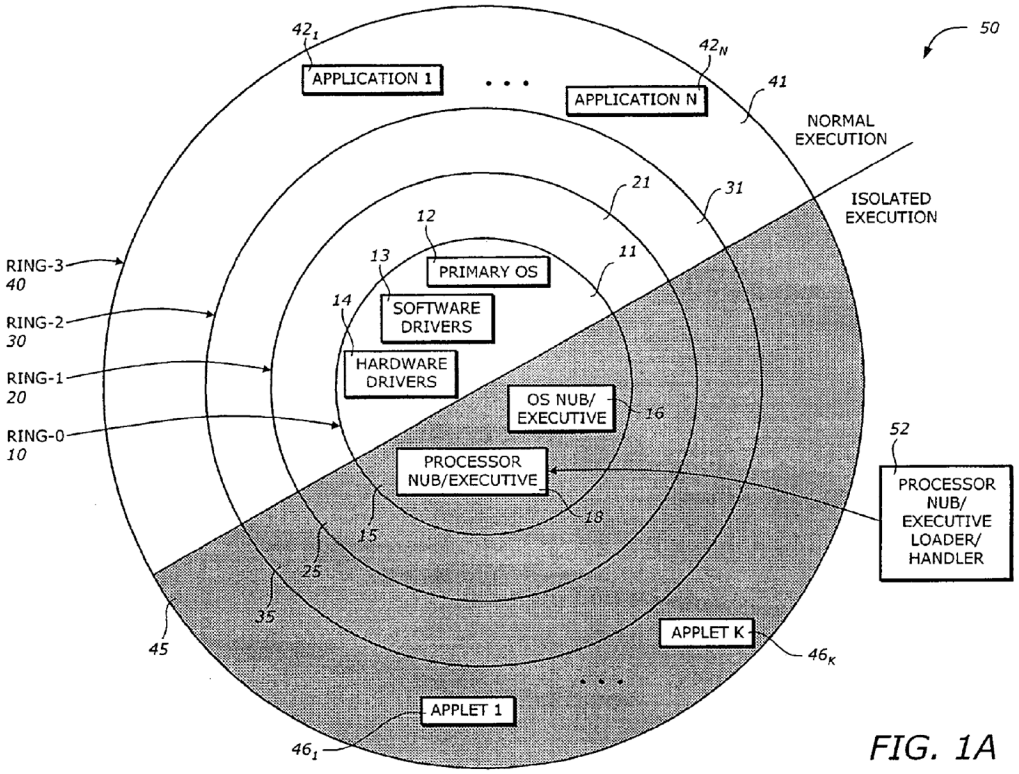

FIG. 1A

Ellison - Figure 1A

B. Petitioner's Characterization of the claimed Authentication Software is Incorrect

Assuming arguendo that Petitioner's mapping of Ellison's usage protector 250 to Patent Owner's claimed authentication software is correct, the usage protector 250

is not "inaccessible to the operating system." (feature [1i]). See Petitioner's Reply, p. 21. On the contrary, Ellison's usage protector 250 is integral to the operating system.

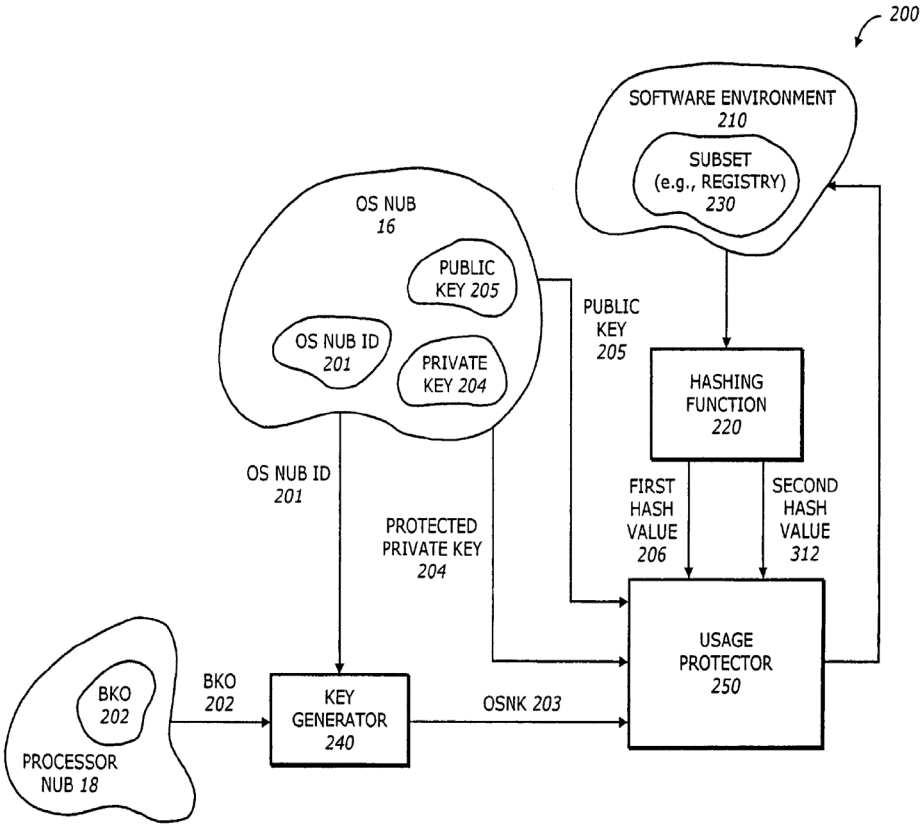

FIG. 2

Ellison - Figure 2

Compare SAMSUNG-1006, Col. 8, ("FIG. 2 [shown above] is a diagram illustrating a secure platform 200 according to one embodiment of the invention. The secure platform 200 includes the OS nub 16, the processor nub 18, a key generator 240, a hashing function 220, and a usage protector 250, all operating within the isolated execution environment, as well as a software environment 210

that may exist either inside or outside the isolated execution environment. The OS nub or OS executive (OSE) 16 is part of the operating system running on the secure platform 200.") with SAMSUNG-1006, Col. 2, lines 46-51, ("An operating system and the processor may have several levels of hierarchy, referred to as **rings**, corresponding to various operational modes. A ring is a logical division of hardware and software components that are designed to perform dedicated tasks within the operating system.")

IV. CONCLUSION

For the reasons discussed above, Patent owner respectfully requests the Board confirm that the Challenged Claims of the '480 patent are patentable.

Respectfully submitted

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CERTIFICATE OF SERVICE

The undersigned certifies that, in accordance with 37 C.F.R. 42.6(e) and 37 C.F.R. 42.105 on January 3, 2023, a true and correct copy of the foregoing was served via email to the Petitioner as follows:

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CERTIFICATION OF WORD NUMBER

Counsel for Patent Owner hereby certifies that this Patent Owner's Sur-Reply To Petitioner's Reply To Patent Owner's Response contains 1600 words as calculated using the word count function of Microsoft Word, not including material excluded under 37 C.F.R. 42.24(a)(1).

Respectfully submitted

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