UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD.;
SAMSUNG ELECTRONICS AMERICA, INC.,
Petitioners,

v.

NETWORK-1 TECHNOLOGIES, INC.,
Patent Owner.

IPR2026-00117
Patent 12,166,869

PATENT OWNER'S BIFURCATED DISCRETIONARY DENIAL BRIEF PURSUANT TO THE DIRECTOR'S MARCH 26, 2025 MEMORANDUM

Mail Stop "PATENT BOARD"
Patent Trial and Appeal Board
U.S. Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

TABLE OF CONTENTS

TABLE OF AUTHORITIES

Cases

Statutes

Other Authorities

Regulations

EXHIBIT LIST

Exhibit	Description
EX2001	Complaint for Patent Infringement, *Network-1 Technologies, Inc. v. Samsung Electronics Co., Ltd., et al.*, EDTX-2-25-cv-00667, Dkt. 1 (June 27, 2025)
EX2002	Docket Control Order, *Network-1 Technologies, Inc. v. Samsung Electronics Co., Ltd., et al.*, EDTX-2-25-cv-00667, Dkt. 26 (Oct. 10, 2025)
EX2003	U.S. Patent No. 11,606,204
EX2004	U.S. Patent No. 11,973,864
EX2005	*Reserved*
EX2006	U.S. Patent No. 11,233,780
EX2007	U.S. Patent No. 12,207,094
EX2008	U.S. Patent No. 11,916,893
EX2009	6/28/2017 Information Disclosure by Applicant for Application No. 14/884,870
EX2010	2/9/2021 Information Disclosure by Applicant for Application No. 17/171,396
EX2011	U.S. Patent No. 10,187,206
EX2012	5/25/2017 Notice of References Cited for Application No. 14/718,619
EX2013	9/17/2019 Notice of References Cited for Application No. 16/248,090
EX2014	8/7/2019 Non-Final Office Action for Application No. 16/125,586
EX2015	Diffie, W. and Hellman, M. E., "New Directions in Cryptography," IEEE Transactions on Information Theory, Vol. IT.22, No. 6 (Nov. 1976)
EX2016	Defendants' Patent Local Rule 3-3 Disclosure of Invalidity Contentions, *Network-1 Technologies, Inc. v. Samsung Electronics Co., Ltd., et al.*, EDTX-2-25-cv-00667 (December 9, 2025)
EX2017	U.S. Patent No. 8,761,390
EX2018	Declaration of R. Allan Bullwinkel in Support of Patent Owner's Discretionary Denial Brief
EX2019	Declaration of John Nix in Support of Patent Owner's Discretionary Denial Brief
EX2020	Email chain dated September 27, 2016, produced with Bates Nos. NWO_SAM_00013288–90
EX2021	Email chain dated December 21, 2016, produced with Bates No. NWO_SAM_00013295
EX2022	"Patent Portfolio for 'Embedded SIMs' and the 'Internet of Things,'" produced with Bates Nos. NWO_SAM_00013436–37
EX2023	Email chain dated January 3, 2017, produced with Bates Nos.

	NWO_SAM_00013296–97

I. Introduction

Patent Owner Network-1 Technologies, Inc. ("Network-1" or "PO") respectfully requests discretionary denial of Samsung Electronics Co., Ltd.'s and Samsung Electronics America, Inc.'s (collectively, "Samsung" or "Petitioners") Petition to institute *inter partes* review of U.S. Patent No. 12,166,869. In support, Network-1 submits this briefing—limited in scope to discretionary denial issues—pursuant to the Director's March 26, 2025 Memorandum.

First, the parallel district court litigation will address the same invalidity grounds at issue in this proceeding, and the resolution of that proceeding will coincide with the final written decision in this proceeding. By that time, the parties will have invested considerable resources in the district court litigation.

Second, Samsung has known of the challenged patent families since at least 2016, when Samsung learned about them directly from the inventor and during prosecution of its own patents.

Finally, the merits of the Petition are weak. The Petition ignores the teachings of Jeong (Grounds 1, 3, 5, and 7) and instead manufactures non-existent key pairs to purportedly satisfy claim limitations. For the remaining grounds (2, 4, 6, and 8), the Petition uses hindsight bias to substitute the disclosed Diffie-Hellman algorithm with the claimed ECDH algorithm without any factual basis for making such a substitution.

As detailed below, all these reasons support discretionary denial.

II. Factual Background

A. Network-1's Lawsuit is Scheduled for Trial Within Days Of Any Final Written Decision Deadline

On June 27, 2025, Network-1 sued Samsung in *Network-1 Technologies, Inc. v. Samsung Electronics Co., Ltd., et al.*, Case No. 2:25-cv-00667 (E.D. Tex.) (the "Litigation") for infringing six patents: U.S. Patent Nos. 11,233,780 ("the '780 Patent"); 11,916,893 ("the '893 Patent"); 12,207,094 ("the '094 Patent"); 12,166,869 ("the '869 Patent"); 11,606,204 ("the '204 Patent"); and 11,973,864 ("the '864 Patent") (collectively, the "Asserted Patents" or the "Challenged Patents"). EX2001 (Complaint) at 2. Trial in the Litigation is scheduled for June 7, 2027. EX2002 (DCO) at 1.

About four months after the Litigation began—between November 7 and November 26, 2025—Samsung filed IPR Petitions challenging each of the Asserted Patents. The following table shows the accorded filing date and projected final written decision ("FWD") deadline[1] for each IPR proceeding, with the information

[1] Projected FWD deadlines were calculated by adding 18 months to the issue date of the notice of filing date accorded to account for PO's Preliminary Response, an Institution Decision, and a FWD. *See* 37 C.F.R. § 42.107(b); 35 U.S.C. §§ 314(b), 316(a)(11).

for this proceeding in bold and underlined:

Patent No.	IPR No.	Accorded Filing Date	Projected Final Written Decision
11,606,204	IPR2026-00115	2025-11-20	2027-05-20
11,973,864	IPR2026-00116	2025-11-20	2027-05-20
12,166,869	**IPR2026-00117**	**2025-12-01**	**2027-06-01**
11,233,780	IPR2026-00114	2025-12-03	2027-06-03
12,207,094	IPR2026-00118	2025-12-03	2027-06-03
11,916,893	IPR2026-00119	2025-12-03	2027-06-03

In each IPR proceeding, the PTAB is projected to issue its FWD within days of the Litigation trial date scheduled for June 7, 2027.

B. The Challenged Patents Address Related Subject Matter

The Challenged Patents were all invented by John Nix in 2013 (who also serves as a consultant for Network-1) and were acquired by Network-1 in 2017. EX2019 ¶ 2. They consist of three patent families and address related subject matter (*e.g.*, secure device authentication in a wireless network). As shown below, the Challenged Patents are interrelated and cross-cite to one another.

The ’869 Patent is titled “Key Derivation for a Module Using an Embedded Universal Integrated Circuit Card.” EX1001 at 1:1-3. It cites to and incorporates by reference Application No. 14/055,606 (a parent application of both the ’204 and ’864 Patents, EX2003 at 1:10-20; EX2004 at 1:10-22) as related subject matter. EX1001 at 1:35-41.

The ’204 and ’864 Patents are both titled “Systems and Methods for ‘Machine-to-Machine’ (M2M) Communications Between Modules, Servers, and an

Application Using Public Key Infrastructure (PKI),” and both issued from a common series of continuation applications. EX2003 at 1:1-20; EX2004 at 1:1-22.

The ’780, ’094, and ’893 Patents are titled “Embedded Universal Integrated Circuit Card Supporting Two-Factor Authentication” and issued from a common series of continuation applications. EX2006 at 1:1-24; EX2007 at 1:1-32; EX2008 at 1:1-27. All three patents refer to U.S. Pat. No. 9,319,223 (a parent application of the ’869 Patent, EX1001 at 1:8-21) as related subject matter. EX2006 at 1:25-30; EX2007 at 1:33-38; EX2008 at 1:28-34. And as noted above, the ’869 Patent family refers to the ’204 and ’864 Patents as related subject matter.

C. Samsung Has Known of the Challenged Patent Families Since 2016

Samsung has known about the inventions disclosed in the Challenged Patents and their relevance since well before the filing of the Litigation. Samsung learned about these inventions in two ways: (1) from prior licensing discussions with the inventor; and (2) during prosecution of its own patents.

First, Samsung learned about Network-1’s inventions as part of monetization discussions between Samsung and the inventor. In September 2016, the inventor’s representative told the leader of Samsung’s Networking division about these inventions. *See* EX2020; EX2019 ¶ 3-4. Then in December 2016, the inventor’s representative “shared a summary of the patent portfolio with the head of IoT at Samsung Korea . . . .” *See* EX2021; EX2019 ¶ 5. The summary specifically

identified Patent No. 9,319,223 (parent to the '869 Patent) and referenced continuation applications, indicating ongoing prosecution. *See* EX2022 at 2; EX2019 ¶ 5. Samsung "reviewed the patents" by at least January 2017 and, despite strong patent reads, "decided not to pursue." *See* EX2023; EX2019 ¶ 6.

Samsung's knowledge of Network-1's inventions (including continuations) is confirmed by IDSs Samsung submitted to the PTO while prosecuting its own patent applications. For instance, on June 28, 2017, Samsung submitted an IDS while prosecuting Application No. 14/884,870 that identified U.S. Patent No. 9,319,223 (EX2009 at 1), which is the original parent to the '869 Patent. *See* EX1001 at Page 2 (identifying the '223 Patent). Regarding a different patent application (Appl. No. 17/171,396), Samsung submitted an IDS on February 9, 2021, identifying U.S. Patent Publication 2017/0373845 (EX2010 at 3), which is a publication of U.S. Patent No. 10,187,206, an intermediate parent to the '869 Patent. *See* EX2011 ('206 Patent); EX1001 at Page 2 (identifying the '206 Patent). These disclosures by Samsung, which post-date the communications detailed above, confirm that Samsung knew about Network-1's inventions and their continuations.

The PTO also identified parent patents and patent publications of the '869 Patent during prosecution of at least three other Samsung patents. During prosecution of Samsung's Application No. 14/718,619, the Examiner identified U.S. Patent No. 9,319,223, the original parent to the '869 Patent. *See* EX2012 (5/25/2017

Notice of References Cited). During prosecution of Samsung's Application No. 16/248,090, the Examiner identified this same parent to the '869 Patent in a Notice of References cited. *See* EX2013 at 1 (9/17/2019 Notice of References Cited). Finally, during prosecution of Samsung's Application No. 16/125,586, the Examiner identified an intermediate parent to the '869 Patent (U.S. Patent No. 10,187,206) as "pertinent." *See* EX2014 at Page 4 (8/7/2019 Non-Final Rejection).

In summary, Samsung was directly contacted by the '869 Patent inventor regarding the '869 Patent family, and the PTO identified a patent in the '869 Patent family as "pertinent" to Samsung's patents. Despite this knowledge of the '869 Patent family, Samsung never moved to challenge any patents in the family prior to November 2025—more than 9 years after being made aware of the content and relevance of the disclosures to Samsung's business.

III. Argument

The *Fintiv* factors "support the exercise of authority to deny institution in view of an earlier trial date" in the Litigation based on the facts of this case. *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11, at 6 (P.T.A.B. Mar. 20, 2020) (precedential) ("*Fintiv I*"). Additional considerations affecting the Director's discretion, including the settled expectations of the parties and Samsung's excessive reliance on conclusory and/or copycat expert testimony, also favor discretionary denial.

A. The *Fintiv* Factors Support Discretionary Denial

The Director should deny the Petition under 35 U.S.C. § 314(a) and *Fintiv* because of the overwhelming investment in the parallel Litigation that will occur before the PTO will issue a FWD in this proceeding (or any other proceeding regarding the Challenged Patents). PO sued Samsung for infringement of the Challenged Patents on June 27, 2025. EX2001 (Complaint). Trial in the Litigation is scheduled to start on June 7, 2027—within days of the projected FWD deadlines in each IPR proceeding for the Challenged Patents. *See supra* Section II.A.

Additionally, the same invalidity arguments will be addressed and resolved in the co-pending Litigation at essentially the same time that the Board would issue a FWD in these IPR proceedings. Accordingly, institution of trial would not be an efficient use of the Board's resources.

The PTO considers the presence and status of parallel district court litigation in determining whether to deny institution. *See NHK Spring Co. Ltd. v. Intri-Plex Techs. Inc.*, IPR2018-00752, Paper 8 at 20 (P.T.A.B. Sept. 12, 2018) (precedential); *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 15 at 17 (P.T.A.B. May 13, 2020) (informative) [hereinafter "*Fintiv*"]; *see also Gen. Plastic Indus. Co., Ltd. v. Canon Kabushiki Kaisha*, IPR2016-01357, Paper 19 at 16–17 (P.T.A.B. Sept. 6, 2017). *Fintiv* "sets forth factors that balance considerations of system efficiency, fairness, and patent quality when a patent owner raises an argument for discretionary denial

due to the advanced state of a parallel proceeding." *Fintiv*, Paper 15 at 7–8.

The factors are:

1. whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted;
2. proximity of the court's trial date to the Board's projected statutory deadline for a final written decision;
3. investment in the parallel proceeding by the court and the parties;
4. overlap between issues raised in the petition and in the parallel proceeding;
5. whether the petitioner and the defendant in the parallel proceeding are the same party; and
6. other circumstances that impact the Board's exercise of discretion, including the merits.

Id. As detailed below, these factors favor discretionary denial.

1. Factor 1: whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted

This factor favors discretionary denial because, although Samsung recently filed a motion to stay the Litigation, that motion will almost certainly be denied based on the Court's established practice. Samsung is concurrently challenging claims of six different patents asserted in the Litigation in the Eastern District of Texas. And the "universal practice" in that district is to "den[y] stay requests when the PTAB has not yet acted on the petition for review." *Tessera Advanced Techs., Inc. v. Samsung Elecs. Co.*, 2018 U.S. Dist. LEXIS 120999, at *10-11 (E.D. Tex.

July 19, 2018). Thus, until the Director makes institution decisions in each IPR proceeding, Samsung's stay motion will certainly be denied.

But even if the Director decides to institute IPR on some of the Challenged Patents, the Eastern District of Texas is unlikely to stay the Litigation. That is because "[i]t has been [that district's] consistent and long established practice to deny motions to stay pending IPR . . . when the PTAB . . . [has] instituted review on less than all asserted claims of all asserted patents . . . ." *AGIS Software Development LLC v. Google LLC*, No. 2:19-cv-361-JRG, 2021 U.S. Dist. LEXIS 24195, at *9 (E.D. Tex. Feb. 9, 2021); *see Force Mos Tech., Co. Ltd. v. Asustek Computer, Inc.*, No. 2:22-cv-460-JRG, 2024 U.S. Dist. LEXIS 66423, at *10 (E.D. Tex. Apr. 11, 2024) (similar). Thus, to have any chance of receiving a stay, each of Samsung's six Petitions would have to be instituted.

In sum, there is strong evidence that Samsung's stay motion will be denied, which favors discretionary denial. At minimum, "there is insufficient evidence that the district court is likely to stay its proceeding even if the Board were to institute trial." *Coretronic Corp. v. Maxell, Ltd.*, IPR2025-00474, Paper 11 at 2 (P.T.A.B. Jul. 10, 2025) (Acting Dir. Stewart, C.M.).

2. Factor 2: proximity of the court's trial date to the Board's projected statutory deadline for a final written decision

Factor 2 favors discretionary denial because trial in the Litigation will occur within days of the projected FWD for this IPR proceeding (and those regarding the

other Challenged Patents). *See supra* Section II.A. If the PTO institutes, the anticipated deadline for a FWD would be June 1, 2027. *See id.* The Litigation trial is scheduled to occur within a week of that date on June 7, 2027. *See* EX2002 at 1.

This factor favors denial given the proximity between the Litigation trial date and the projected FWD deadline. *See, e.g.*, *Advanced Micro Devices, Inc. et al. v. Concurrent Ventures, LLC et al.*, IPR2025-00223, Paper 9 at 2 (P.T.A.B. June 12, 2025) (Acting Dir. Stewart, C.M.) (discretionarily denying based, in part, on a final written decision deadline within approximately two weeks of the scheduled trial date) (reversed on rehearing due to subsequent stay in district court proceeding). "Even though a district court trial date that occurs after a projected final written decision date reduces the possibility of conflicting decisions, that benefit does not outweigh the efficiencies gained by avoiding parallel proceedings in this instance because of the parties' meaningful investment in the district court proceeding . . . ." *Id*. Given the substantial investment in the Litigation (*i.e.*, the parties will be ready for trial) that will occur before any FWD might issue in this proceeding, this factor favors discretionary denial.

3. Factor 3: investment in the parallel proceeding by the court and the parties

This factor favors discretionary denial because of the significant investment the district court and the parties have already made in the Litigation, as well as the work that will be done before the institution decision. In the Litigation, the parties

have exchanged their infringement and invalidity contentions. EX2002 at 4-5 (Docket Control Order); EX2018 ¶¶ 2-3. Further, the parties have responded to voluminous written discovery—answering dozens of interrogatories and several requests for admission. EX2018 ¶ 5. The parties have also produced and reviewed tens of thousands of pages of documents. *Id.* ¶¶ 2-3, 6. And the parties have served third-party subpoenas on RPX; five chipmakers; and mobile network operators AT&T, T-Mobile, and Verizon. *Id.* ¶5. Thus, by the projected institution deadline of June 1, 2026, the district court and the parties will have spent considerable resources in the Litigation.

4. Factor 4: overlap between issues raised in the petition and in the parallel proceeding

Factor 4 favors discretionary denial given the complete overlap between the invalidity allegations in the Litigation and the Petition. Samsung asserts the following eight Grounds in this IPR:

#	Claims	Ground (All Grounds are Based on Obviousness)
1	1-4, 7, 9-14, 16-20	Nakhjiri (Ex-1005), Bradley (Ex-1006), and Jeong (Ex-1007)
2	1-4, 7, 9-14, 16-20	Nakhjiri, Bradley, and Ala-Laurila (Ex-1013)
3	5-6	Nakhjiri, Bradley, Jeong, and X9.63-Overview (Ex-1011)
4	5-6	Nakhjiri, Bradley, Ala-Laurila, and X9.63-Overview
5	8	Nakhjiri, Bradley, Jeong, and Pierce (Ex-1009)
6	8	Nakhjiri, Bradley, Ala-Laurila, and Pierce
7	15	Nakhjiri, Bradley, Jeong, and GlobalPlatform (Ex-1010)
8	15	Nakhjiri, Bradley, Ala-Laurila, and GlobalPlatform

Pet. at 3.

Three weeks after filing its Petition, Samsung served invalidity contentions in the Litigation, which must identify the prior art (including obviousness combinations) on which Samsung intends to rely in the Litigation. *See* EX2016 (invalidity contention cover pleading). Regarding the '869 Patent, Samsung explicitly included all Grounds raised here in its invalidity theories for the Litigation, ensuring complete overlap. *See* EX2016 at 202 (Bates Page 207) ("Defendants incorporate by reference, as if set forth fully herein, all filings and exhibits from *Inter Partes* Review IPR2026-00117, filed November 20, 2025 with the PTAB, including any subsequent and future filings in that case."). Additionally, the first eight obviousness combinations identified in Samsung's invalidity contentions mirror the prior art combinations relied on for the eight grounds raised in the Petition. *Compare* Pet. at 3, *with* EX2016 at 207 (Bates Page 212).[2] Thus, there is total overlap between the Petition grounds and the Litigation invalidity theories.

Despite this overlap, the Petition failed to include a stipulation (*Sotera* or otherwise) to mitigate the duplication of effort that would occur if this IPR was

[2] In the Litigation, Samsung identified the Peirce patent (U.S. Patent No. 8,761,390, EX2017) that issued from Application No. 12/164,686. In this proceeding, Samsung relies on the Patent Application Publication (US 2009/0323967) for that same application.

instituted. Rather than offer such a stipulation "as soon as practicable,"[3] Samsung delayed 4 weeks after filing its Petition before offering any stipulation. *See* Paper 7. Furthermore, the belated stipulation is limited and acknowledges that it falls short of a full stipulation that might eliminate duplication of issues across other venues (as discussed in the Notice of Proposed Rulemaking issued October 17, 2025). Instead, the stipulation confirms that Samsung views this proceeding as an additional bite at the apple rather than any sort of true alternative to trying validity in the Litigation. *See* Paper 7 at 1 n.1 (reserving the right to modify the stipulation at a later date despite already being well aware of what has been proposed as a proper stipulation under pending rulemaking). Finally, the stipulation fails to address system prior art, and Samsung identified a Gemalto system as prior art in its invalidity contentions. *See* EX2016 at 204 (Bates Page 209). The Bradley reference, included in every ground, is assigned to Gemalto. *See* EX1006 at 1. In short, Samsung intends to try validity based on the same prior art in both the Litigation and this IPR. Therefore, Samsung's stipulation is "not [ ] particularly meaningful because the efficiency

[3] *See* https://www.uspto.gov/patents/ptab/interim-director-discretionary-process at I.D (accessed on February 1, 2026) [hereinafter "Interim Director Discretionary Process"].

gained in an AIA proceeding will be limited,"[4] and this factor favors discretionary denial.

5. Factor 5: whether the petitioner and the defendant in the parallel proceeding are the same party

Petitioners and Patent Owner are both parties to the parallel Litigation. *See* EX2001. When the parties are the same—like in this case—this factor favors discretionary denial. *Sotera Wireless*, IPR2020-01019, Paper 12 at 19.

6. Factor 6: other circumstances that impact the Board's exercise of discretion, including the merits

Factor 6 weighs in favor of discretionary denial. In this case, the merits of the Petition are weak regarding the single independent claim of the '869 Patent. Petitioners' references—Jeong (EX1007 and EX1012) for Grounds 1,3,5,7, and Ala-Laurila (EX1013) for Grounds 2,4,6,8—fail to disclose or teach limitations of the '869 Patent's sole independent claim. Other distinctions remain, and PO incorporates by reference its forthcoming Preliminary Response.

Jeong relates to a mobile payment system and communications between mobile devices, merchants, banks, settlement centers, and certificate authorities. *See* EX1007 at 005 (Section 3). It proposes a "Safe AKA Procedure" involving communication exchanges between a USIM, SN (Serving Network), and HN (Home

[4] *See* Interim Director Discretionary Process at I.D.

Network). *See* EX1007 at 008 (Figure 6). Petitioners rely on an authentication server associated with HN as the claimed "second server" of Limitation 1(f). *See* Pet. at 42. But, as detailed below, Petitioners repeatedly rely on Jeong's teachings about how communications occur with the SN rather than the HN to purportedly satisfy limitations involving communications with the claimed "second server."

For limitation 1(e), which requires "generating, by the eUICC, a second module public key and a corresponding second module private key," Petitioners allege that "a POSITA would have understood that Jeong's MS would generate a public/private key pair (d_{MS}/Q_{MS}) for the ECDH exchange with HN." Pet. at 40. As Petitioners admit, "Jeong does not specifically provide identifiers for the public/private key pairs used to generate the $SSK_{MS\text{-}HN}$ key . . . ." *Id.*[5] The reason is simple—Jeong does not disclose generating the second public/private key pairs as required by the claim. Instead, Jeong teaches that the $SSK_{MS\text{-}HN}$ key is "generated using the initial point and secret key registered in the USIM card and the certificate authority when the USIM card is first registered . . . ." EX1007 at 009 (Section 4.1.1(1)). No public/private key pair is needed or used based on Jeong's explicit teachings. In addition, a "secret key registered in the USIM and the certificate

[5] Nonetheless, Petitioners manufactured identifiers for these missing keys in their claim elements charts. *See* Pet. at 41 (identifying Q_{MS} and d_{MS}).

authority" are not the recited "second module private key". Rather, that "secret key registered in the USIM and the certificate authority" is a shared key between the USIM and the certificate authority, not a private key for the USIM.

For these same reasons (*i.e.*, the absence of a second public/private key pair), Petitioners fail to show that Jeong meets limitations 1(f) and 1(g). Limitation 1(f) requires "sending, to a second server associated with the wireless network, the second module public key." As detailed above, Jeong fails to disclose generating a second module public key, so it also fails to disclose sending that key to the authentication center of the HN, which Petitioners have identified as the "second server." In an effort to sidestep this deficiency, Petitioners point to communications between the MS and SN. *See* Pet. at 42 n.10. But Jeong explicitly teaches that the $SSK_{MS\text{-}SN}$ is generated differently than the $SSK_{MS\text{-}HN}$. That is because the communication channel between the MS and SN ***is not*** a trusted channel, and the channel between the SN and HN ***is*** a trusted channel. See EX1007 at 008 (Section 3.2) (explaining that "the communication channel between the SN and H[N] is secure"). Therefore, one-time (OT) shared secrets are needed for the MS to communicate with the SN, but they are not needed for communications between the MS and HN.

Finally, limitation 1(g) requires "generating a symmetric key using a second ECDH key exchange with the second module private key and the cryptographic

parameters." Here again, Petitioners erroneously rely on the communications between the MS and SN to purportedly show how communications occur between the MS and HN. *See* Pet. at 42 n.11. But Jeong teaches that the shared secret key used for communications between the MS and HN "is generated using the initial point and secret key registered in the USIM card and the certificate authority when the USIM card is first registered" (EX1007 at 009 (Section 4.1.1(1))), which is different than the claim requirements. In addition, Jeong's teachings for the mutual derivation of the shared secret $SSK_{MS\text{-}HN}$ using "a secret key registered in the USIM and the certificate authority" does not teach the recited ECDH key exchange. An ECDH key exchange uses a private key for the USIM that is different than the private key for the certificate authority.

For its second set of grounds (2, 4, 6, and 8), Petitioners rely on Ala-Laurila to purportedly disclose or teach multiple elements of independent claim 1. However, Ala-Laurila fails to disclose at least limitations 1(e), 1(f), and 1(g) because it fails to disclose generating public and/or private keys for use with an "ECDH key exchange" as required. Petitioners rely on a single statement in Ala-Laurila to support their arguments regarding limitations 1(e), 1(f), and 1(g): "The request 204 is preferably sent in ciphered form to the PAC using the Diffie-Hellman algorithm, for example." EX1013 ¶ [0026]. Based on this sentence, Petitioners argue that a POSITA would have used Nakhjiri's "ECDH mechanism" to satisfy these three limitations. *See* Pet.

at 63-66.

However, "***the*** Diffie-Hellman algorithm" referred to by Ala-Laurila is the algorithm disclosed in the 1976 seminal paper by Whitfield Diffie and Martin Hellman. *See* EX2015. Petitioners provide no factual support for the conclusory statement that "[a] POSITA would have applied Nakhjiri's same ECDH mechanism to generate a second, ephemeral keypair for the authentication phase and send the second module public key to the PAC/GAGW . . . ." Pet. at 63. Rather, Petitioners rely on hindsight to map a single reference to "the Diffie-Hellman algorithm" as purportedly disclosing:

> e) generating, by the eUICC, a second module public key and a corresponding second module private key;
> f) sending, to a second server associated with the wireless network, the second module public key;
> g) generating a symmetric key using a second ECDH key exchange with the second module private key and the cryptographic parameters;"

EX1001 at 148:20-26; *see* Pet. at 63-66. Petitioners have failed to identify any factually supported reason to modify Ala-Laurila to use an algorithm other than "the Diffie-Hellman algorithm" it specifically identifies.

Furthermore, Petitioners' proposed use of Nakhjiri for these same limitations fails. Regarding limitation 1(e), the teaching in Nakhjiri for the generation of a module/USIM private key MNO_ECC_PVKDEV would not result in a second module private key. Nakhjiri's use of (i) a private seed shared between the USIM

and the network and (ii) the MNO identifier in the deterministic key generator function (KGF) (*see* EX1005 at 4:50, 5:61-64) will always result in the same value for a module private key and not the generation of a second module private key as required by limitation 1(e). Secure use of the Diffie-Hellman algorithm contemplated by Ala-Laurila uses private keys generated with random numbers. Consequently, Ala-Laurila could not be combined with Nakhjiri for a reasonable probability of success to teach limitation 1(e).

Regarding limitation 1(f), security in Nakhjiri depends on the module/USIM public key MNO_ECC_PLKDEV remaining secret. *See* EX1005 at 5:8-17. This teaches away from limitation 1(f) since a mobile device performing limitation 1(f) means the Nakhjiri's module/USIM public key MNO_ECC_PLKDEV becomes public and is no longer secret. Consequently, a Nakhjiri-Ala-Laurila combination would not teach limitation 1(f).

B. Additional Considerations Also Support Discretionary Denial

In addition to the *Fintiv* factor analysis discussed above, several other considerations support discretionary denial.

First, the settled expectations of the parties support discretionary denial. As detailed above in Section II.C, Samsung has been aware of the disclosures of the Challenged Patents and their relevance to Samsung's products since at least 2016. Nonetheless, Samsung never challenged validity of any patents in the families (and

further declined offers to purchase the patents) until after the Litigation was filed.

Second, Samsung's extensive reliance on an expert declaration supports discretionary denial.[6] In the absence of compelling prior art, Samsung has relied heavily on its expert declaration (EX1002), citing to it over 140 times throughout the Petition. *See generally* Pet. (citing "Ex-1002"). Yet its declarant added little (if any) value to the analysis, frequently relying on conclusory statements and repeating/rewording the contents of the Petition itself. *Compare* Pet., *with* EX1002. Samsung's heavy reliance on conclusory testimony that simply duplicates arguments made in the Petition is not helpful to the trier of fact and provides another reason that the Petition should be discretionarily denied.

IV. Conclusion

For all of the reasons discussed above, Patent Owner respectfully requests that the Director decline to institute *inter partes* review of the '869 Patent.

---

[6] *See* March 26, 2025 Interim Processes for PTAB Workload Management at 2, available at https://www.uspto.gov/sites/default/files/documents/InterimProcesses-PTABWorkloadMgmt-20250326.pdf (accessed on January 16, 2026); *Xerox Corp. et al. v. Bytemark, Inc.*, IPR2022-00624, Paper 9 at 15 (P.T.A.B. Aug. 24, 2022) (granting little weight to an expert declaration that "merely repeats, *verbatim*, the conclusory assertion for which it is offered to support") (precedential).

Dated: February 2, 2026 Respectfully submitted,

/ R. Allan Bullwinkel /
R. Allan Bullwinkel (Reg. No. 77,630)
Attorney for Patent Owner
Network-1 Technologies, Inc.

CERTIFICATE OF SERVICE

The undersigned certifies that pursuant to 37 C.F.R. § 42.6(e), a copy of the foregoing **Patent Owner's Discretionary Denial Brief,** were served via email to counsel of record for Petitioners as follows:

Counsel for Petitioners	
Lead Counsel	**Backup Counsel**
William M. Fink (Reg. No. 72,332) O'Melveny & Myers LLP 1625 Eye Street, NW Washington, DC 20006 Telephone: (202) 383-5300 Fax: (202) 383-5414 Email: tfink@omm.com	Benjamin M. Haber (Reg. No. 67,129) O'Melveny & Myers LLP 400 South Hope Street, 19th Floor Los Angeles, CA 90071 Telephone: (213) 430-6000 Fax: (213) 430-6407 Email: bhaber@omm.com Marc J. Pensabene (Reg. No. 37,416) O'Melveny & Myers LLP 1301 Avenue of the Americas, Suite 1700 New York, NY 10019 Telephone: (212) 326-2000 Fax: (212) 326-2061 Email: mpensabene@omm.com Brian Cook (Reg. No. 59,356) O'Melveny & Myers LLP 400 South Hope Street, 19th Floor Los Angeles, CA 90071 Telephone: (213) 430-6000 Fax: (213) 430-6407 Email: bcook@omm.com Caitlin P. Hogan (Reg. No. 61,515) O'Melveny & Myers LLP 1301 Avenue of the Americas, Suite 1700 New York, NY 10019

	Telephone: (212) 326-2000 Fax: (212) 326-2061 Email: chogan@omm.com

Dated: February 2, 2026

Respectfully submitted,

/ R. Allan Bullwinkel /
R. Allan Bullwinkel (Reg. No. 77,630)
Attorney for Patent Owner
Network-1 Technologies, Inc.