

IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

WILUS INSTITUTE OF STANDARDS AND
TECHNOLOGY INC.,

Plaintiff,

v.

HP INC.

Defendant.

Civil Case No. 2:25-cv-00069-JRG

JURY TRIAL DEMANDED

WILUS INSTITUTE OF STANDARDS AND
TECHNOLOGY INC.,

Plaintiff,

v.

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

Defendants.

Civil Case No. 2:25-cv-00070-JRG

JURY TRIAL DEMANDED

**DEFENDANTS' P.R. 3-3 AND 3-4 INVALIDITY CONTENTIONS
AND SUBJECT MATTER ELIGIBILITY CONTENTIONS**

Pursuant to Docket Control Order (Dkt. No. 45) and Local Patent Rule 3-3, Defendants Samsung Electronics Co., Ltd. and, Samsung Electronics America, Inc., and HP, Inc. (collectively, "Defendants") hereby provide their Invalidity Contentions, which include the accompanying claim charts concerning U.S. Patent Nos. 10,911,186 ("186 patent"), 11,716,171 ("171 patent"), 11,664,926 ("926 patent"), and 12,004,262 ("262 patent") (collectively, "Asserted Patents") to Wilus Institute of Standards and Technology Inc. ("Plaintiff" or "Wilus"). Defendants also respectfully submit their subject matter eligibility contentions for the Asserted Claims of the

Asserted Patent in accordance with the July 25, 2019 Standing Order Regarding Subject Matter Eligibility Contentions Applicable to All Patent Infringement Cases Assigned to Chief District Judge Rodney Gilstrap (“Standing Order”).

The citation of prior art herein and the accompanying exhibits are not intended to reflect Defendants’ claim construction contentions, which will be disclosed in due course in accordance with the Docket Control Order and may instead reflect Plaintiff’s apparent (and potentially erroneous) claim constructions based on its Infringement Contentions.

I. Introduction

As disclosed in its P.R. 3-1 Infringement Contentions served on Defendants, Plaintiff asserts the following patents and claims:

Patent	Claims
U.S. Patent No. 10,911,186	1-10, 11-18
U.S. Patent No. 11,716,171	1-8, 9-16
U.S. Patent No. 11,664,926	1-7, 8-14
U.S. Patent No. 12,004,262	1-3, 4

The claims identified above are referenced to as “the Asserted Claims” unless reference is made specifically with respect to particularly identified one or more of the Asserted Patents and/or one or more of the Asserted Claims.

As further detailed in and supported by these Invalidity Contentions, Defendants contend that each of the Asserted Claims is invalid under at least 35 U.S.C. §§ 101, 102, 103, and/or 112. Defendants reserve the right to prove the invalidity of the Asserted Claims on bases other than those required to be disclosed in these disclosures pursuant to P.R. 3-3.

II. Amendment/Supplementation

Defendants’ Invalidity Contentions pertain to the Asserted Claims as identified in Plaintiff’s Infringement Contentions. To the extent the Court later allows Plaintiff to amend its

were publicly disclosed, used, sold, or offered for sale, the circumstances under which the research, design, and development activities were conducted, and the identities of the particular individuals involved in such activities through publicly available patents, publications, and product literature. The actual dates, circumstances, and identities of individuals will be the subject of third party discovery during this lawsuit, which Defendants reserve the right to rely upon to corroborate the prior art status of the prior art identified herein. Defendants reserve the right to modify, amend, or supplement these contentions if additional information becomes available during the course of this lawsuit. Furthermore, Defendants will make all such devices, software programs, or other products in Defendants' possession, custody, or control available for inspection by Plaintiff.

Consequently, Defendants reserve the right to amend, modify, or supplement these Invalidity Contentions should additional information become available to them through discovery.

D. U.S. Patent No. 11,664,926

Invalidity claim charts identifying disclosures in the references identified in Tables 1-C, 2-C, and 3-C as to the Asserted Claims of the '926 patent are provided in attached Exhibits C1-C12¹⁷ and Appendix C

Table 1-C: Prior Art Patents and Printed Publications for the '926 patent

No.	Patent No. or Title (Primary Inventor/Author)	Date of Issue/ Publication	Filing Date
RC-1	U.S. Patent Application Publication No. 2017/0111951 to Chu ("Chu 951")	Apr. 20, 2017	Oct. 20, 2015
RC-2	U.S. Patent Application Publication No. 2017/0373813 to Asterjadhi ("Asterjadhi 813")	Dec. 28, 2017	May 25, 2017

¹⁷ Defendants reserve their right to rely on patents or patent application publications that are in the same family as the charted references as well as other revisions of the charted IEEE documents.

No.	Patent No. or Title (Primary Inventor/Author)	Date of Issue/ Publication	Filing Date
RC-3	U.S. Patent Application Publication No. 2018/0069678 to Kim (“Kim 678”)	Mar. 8, 2018	Sept. 5, 2017
RC-4	IEEE 802.11-16/0024r3 (“Cherian 0024”)	Apr. 17, 2016	
RC-5	IEEE 802.11-16/0024r1 (“Stacey 0024”)	Mar. 2, 2016	
RC-6	IEEE 802.11ac (“802.11ac-2013”) ¹⁸	Dec. 18, 2013	
RC-7	IEEE 802.11-2016 (“802.11-2016”) ¹⁹	Dec. 14, 2016	
RC-8	IEEE 802.11-15/0366r1 (“Merlin 0366”)	Mar. 9, 2015	
RC-9	IEEE P802.11ax D1.0 (“Draft D1.0”)	Dec. 1, 2016	
RC-10	IEEE 802.11-16/1185r2 (“Chu 1185”)	Sept. 12, 2016	
RC-11	IEEE 802.11-16/0616r2 (“Asterjadhi 0616”)	Jan. 18, 2016	
RC-12	IEEE 802.11-16/0069r0 (“Chu 0069”)	May 17, 2016	

Moreover, Defendants incorporate by reference the petition for *inter partes* review of the ’926 patent (PTAB-IPR2025-01165) filed on June 24, 2025, including the accompanying exhibits and expert declaration, which contains Defendant’s additional invalidity contentions based on references RC-1, RC-9, and RC-10.

Further, Defendants are actively searching for information regarding at least the following devices and inventions:

¹⁸ IEEE 802.11ac is an amendment to IEEE 802.11-2012, as such IEEE 802.11ac incorporates IEEE 802.11-2012. Therefore, any reference in the instant document to IEEE 802.11ac should be interpreted to include IEEE 802.11-2012.

¹⁹ IEEE 802.11-2016 is an amendment to IEEE 802.11-2012 & 802.11ac-2013, as such IEEE 802.11-2016 incorporates IEEE 802.11-2012 & 802.11ac-2013. Therefore, any reference in the instant document to IEEE 802.11-2016 should be interpreted to include IEEE 802.11-2012 & 802.11ac-2013.

Table 2-C: Prior Art Systems and Inventions for the '926 patent²⁰

No.	Name of System or Invention	Date of Sale / Offer for Sale / Public Use
RC-13	Systems implementing IEEE 802.11ac ("Wi-Fi 5") ²¹	2013
RC-14	HP Spectre 13 (2013 Model)	October 2013
RC-15	HP Envy 17 (2014 Model)	February 2014
RC-16	Samsung Galaxy S4 Smartphone	April 2013
RC-17	Samsung Galaxy Note 3 Smartphone	October 2013
RC-18	Samsung Galaxy Tab Pro	February 2014
RC-19	Samsung Galaxy Tab S	July 2014
RC-20	Samsung ATIV Book 9 (2014 Edition)	May 2014
RC-21	Samsung ATIV Book 9 (2015 Edition)	December 2015
RC-22	Samsung Galaxy S7 Smartphone	March 2016
RC-23	Samsung Galaxy Note7	August 2016
RC-24	Samsung Galaxy A7	September 2018
RC-25	Samsung Galaxy S7 Smartphone	March 2016

For each of the prior art devices identified above, Defendants have listed and produced one or more documents as evidence of the relevant features and functionality. Defendants have obtained or are in the process of obtaining the identified devices and will make them available for inspection. To the extent that one or more documents (*e.g.*, user manual) may be used to describe aspects of a particular device, that device is a single reference for prior art purposes under 35 U.S.C. § 102. Some or all of the corroborating references may also separately qualify

²⁰ All of the systems listed in this table are Wi-Fi 5 (802.11ac) enabled and capable, and thus invalidate the asserted claims of the '926 patent, alone or in combination with other art. Furthermore, some of those systems may be Wi-Fi 6 enabled and capable. Wilus's May 14, 2025 Infringement Contentions are based entirely on the Wi-Fi 6 standard. Thus, while we disagree that Wilus's Infringement Contentions demonstrate infringement, to the extent the Court finds otherwise, the Wi-Fi 6 systems listed above also invalidate the asserted claims of the '926 patent.

²¹ The attached invalidity chart over IEEE 802.11ac (RC-6) demonstrates how the systems implementing IEEE 802.11ac, listed in Table 2-C, disclose each element of each asserted claim.

as prior art publications under 35 U.S.C. § 102 and may be used as invalidating references under 35 U.S.C. §§ 102 and/or 103.

Discovery is ongoing, and Defendants may serve third parties with document subpoenas. One or more of these devices, along with related documentation, may be invalidating, and Defendants reserve the right to supplement these contentions accordingly.

In addition, Defendants identify, responsive to Plaintiff's infringement contentions, the following patents, publications, and systems as evidence of the state of the art as it relates to determining a response frame type based on information related to a received frame:²²

- U.S. Patent Application Publication No. 2014/0233551
- U.S. Patent No. 10,575,280
- U.S. Patent Application Publication No. 2017/0311310
- U.S. Patent Application Publication No. 2016/0007305
- U.S. Patent Application Publication No. 2017/0048866
- "A simple and efficient selective repeat scheme for high throughput WLAN, IEEE 802.11n" by Nakajima
- U.S. Patent Application Publication No. 2018/0054758
- IEEE 802.11-16/0867r2
- IEEE 802.11-16/0961r2
- IEEE 802.11-16/0378r2

Each of these references (and other references in the same family) show that determining a response frame type based on information related to a received frame is not novel, and was well-known in the art for many years. In light of the references discussed herein, the Asserted Claims of the '926 patent cannot be valid.

Defendants' reference to a particular product, device, or software program in these contentions should be interpreted as a reference to the system itself and any corresponding patents, publications, or product literature relating to the cited system. Upon information and

²² Defendants reserves their right to rely on any unlisted patents, patent application publications, provisional applications that are related to the listed reference.

belief, the systems were publicly disclosed, used, sold, or offered for sale in the United States before the alleged priority date of the Asserted Claims of the '926 patent. Defendants' investigation of such prior art systems is still ongoing, and discovery has not yet been received from third parties who may have information concerning such prior art systems. Accordingly, subsequent discovery may reveal information that affects the disclosures and contentions herein. For example, subsequent discovery may provide additional information regarding whether or not any of the third party prior art systems anticipate or render obvious the Asserted Claims of the '926 patent. As such, Defendants reserve all rights to supplement their invalidity contentions.

Many of the inventive, research, design, and development activities concerning these systems and technologies occurred in the United States before the alleged priority date of the Asserted Claims of the '926 patent. Defendants have obtained, and are in the process of obtaining, additional information regarding the dates by which the cited products and services were publicly disclosed, used, sold, or offered for sale, the circumstances under which the research, design, and development activities were conducted, and the identities of the particular individuals involved in such activities through publicly available patents, publications, and product literature. The actual dates, circumstances, and identities of individuals will be the subject of third party discovery during this lawsuit, which Defendants reserve the right to rely upon to corroborate the prior art status of the prior art identified herein. Defendants reserve the right to modify, amend, or supplement these contentions if additional information becomes available during the course of this lawsuit. Furthermore, Defendants will make all such devices, software programs, or other products in Defendants' possession, custody, or control available for inspection by Plaintiff.

Consequently, Defendants reserve the right to amend, modify, or supplement these Invalidity Contentions should additional information become available to them through discovery.

E. U.S. Patent No. 12,004,262

Invalidity claim charts identifying disclosures in the references identified in Tables 1-D, 2-D, and 3-D as to the Asserted Claims of the '262 patent are provided in attached Exhibits D1-D16²³ and Appendix D.

Table 1-D: Prior Art Patents and Printed Publications for the '262 patent

No.	Patent No. or Title (Primary Inventor/Author)	Date of Issue/ Publication	Filing Date
RD-1	IEEE P802.11ax/D1.0	Dec. 1, 2016	N/A
RD-2	IEEE 802.11-17/0250r2, "Proposed Resolution for Comments Related to Various CIDs in 27.5.2" ("Patil 250")	Mar. 9, 2017	N/A
RD-3	IEEE 802.11-16/1415r0, "Proposed Resolution for CID 72 (BSS Color Change Procedure)" ("Patil 1415")	Nov. 6, 2016	N/A
RD-4	IEEE 802.11-16/0929r3, "Comment Resolutions on UL MU Operation" ("Merlin 929")	Sept. 14, 2016	N/A
RD-5	IEEE 802.11-17/0230r1, "Proposed Resolution for Comments Related to Multiple BSSID Set" ("Patil 230")	Mar. 6, 2017	N/A
RD-6	IEEE 802.11-2016 ²⁴	2016	N/A
RD-7	U.S. Patent No. 10,136,349 ("Yang 349")	Nov. 20, 2018	June 20, 2016
RD-8	U.S. Patent Appl. Pub. No. 2016/0249397 ("Seok 397")	Aug. 25, 2016	Feb. 23, 2016

²³ Defendants reserve their right to rely on patents or patent application publications that are in the same family as the charted references as well as other revisions of the charted IEEE documents.

²⁴ IEEE 802.11-2016 is an amendment to IEEE 802.11-2012 & 802.11-2013ac, as such IEEE 802.11-2016 incorporates IEEE 802.11-2012 & 802.11-2013ac. Therefore, any reference in the instant document to IEEE 802.11-2016 should be interpreted to include IEEE 802.11-2012 & 802.11-2013ac.

information including other publications and general scientific or engineering knowledge. Defendants therefore reserve the right to rely upon other unidentified portions of the prior art references and on other publications and expert testimony to provide context and to aid understanding and interpretation of the identified portions.

Defendants also reserve the right to rely upon other portions of the prior art references, other publications, and the testimony of experts to establish that the alleged inventions would have been obvious to a person of ordinary skill in the art, including the basis of modifying or combining certain cited references. To the extent any limitation is deemed not to be exactly met by an item of prior art, then any purported differences are such that the claimed subject matter as a whole would have been obvious to one skilled in the art at the time of the alleged invention, in view of the state of the art and knowledge of those skilled in the art. To the extent that an element of an Asserted Claim is not anticipated, the claim is rendered obvious by combination with one or more other prior art references identified in Appendix B.

3. U.S. Patent No. 11,664,926

The Asserted Claims of the '926 patent are anticipated and/or rendered obvious by prior art. Pursuant to P.R. 3-3(a), Defendants identify the prior art references that anticipate or render obvious the '926 patent Asserted Claims in the claim charts of Exhibits C1 through C12 which are hereby incorporated by reference as if fully set forth herein. The claim charts and Appendix C provide an explanation showing how these prior art references teach or suggest each and every element of the '926 patent Asserted Claims. For each reference or combination of references

suggested by each chart, Defendants indicate whether the prior art renders the claim anticipated and/or obvious pursuant to P.R. 3-3(b).

In addition to contending that the '926 patent Asserted Claims are invalid in view of the prior art references cited in the claim charts and Appendix C, Defendants further contend that the '926 patent Asserted Claims are invalid as anticipated and/or obvious under U.S.C. §§ 102 and/or 103 in view of public knowledge and uses and/or offers for sale of products and services related to the subject matter of the cited references. As discovery is ongoing, Defendants continue to investigate these items and to reserve the right to amend or supplement these contentions to include additional information or documents regarding such products and/or systems.

Defendants' reference to a particular communications device, modem, circuit, software program, device or product in the claim charts and Appendix C should be interpreted as a reference to the product itself and any corresponding patents, publications, or product literature cited in Appendix C that relates to the cited memory module, circuit, software program, device, or product. In addition, Defendants may rely on other documents or things that have not yet been located to support its contentions regarding such prior art communications device(s), modem(s), circuit(s), software program(s), device(s) or product(s) that are referenced in the charts. Furthermore, Defendants' reference to a wireless communications standard, such as, for example IEEE 802.11ac, in the claim charts and Appendix C should be interpreted as a reference to the products implementing and/or complying with such standard.

Defendants incorporate by reference, as if set forth fully herein, all prior art cited during the prosecution of the '926 patent, all prior art as described in any *inter partes* review proceedings of the '926 patent, and all prior art disclosed during previous litigation proceedings involving the '926 patent.

Defendants further identify and hereby incorporate by reference as if set forth fully herein the prior art references and invalidity contentions as described in any Other Wilus Proceedings wherein invalidity contentions have been, or will be, provided regarding the '926 patent, its foreign counterparts, or any parent or child patent of the '926 patent. Defendants reserve the right to use any and all portions of the publication, related publications, commercial embodiments of the publication, and other evidence that is discovered in these lawsuits to demonstrate and/or evidence the components, functionality, and capabilities of the devices and systems disclosed in the references charted.

Where Defendants identify a particular figure in a prior art reference, the identification should be understood to encompass the caption and description of the figure, as well as any text relating to the figure in addition to the figure itself. Similarly, where an identified portion of text refers to a figure or other material, the identification should be understood to include the referenced figure or other material as well. It should be recognized that a person of ordinary skill in the art would generally read a prior art reference as a whole and in the context of other publications, literature, and general knowledge in the field. To understand and interpret any specific statement or disclosure in a prior art reference, a person of ordinary skill in the art would rely upon other information including other publications and general scientific or engineering knowledge. Defendants therefore reserve the right to rely upon other unidentified portions of the prior art references and on other publications and expert testimony to provide context and to aid understanding and interpretation of the identified portions.

Defendants also reserve the right to rely upon other portions of the prior art references, other publications, and the testimony of experts to establish that the alleged inventions would have been obvious to a person of ordinary skill in the art, including the basis of modifying or combining

certain cited references. To the extent any limitation is deemed not to be exactly met by an item of prior art, then any purported differences are such that the claimed subject matter as a whole would have been obvious to one skilled in the art at the time of the alleged invention, in view of the state of the art and knowledge of those skilled in the art. To the extent that an element of an Asserted Claim is not anticipated, the claim is rendered obvious by combination with one or more other prior art references identified in Appendix C.

4. U.S. Patent No. 12,004,262

The Asserted Claims of the '262 patent are anticipated and/or rendered obvious by prior art. Pursuant to P.R. 3-3(a), Defendants identify the prior art references that anticipate or render obvious the '262 patent Asserted Claims in the claim charts of Exhibits D1 through D16 which are hereby incorporated by reference as if fully set forth herein. The claim charts and Appendix D provide an explanation showing how these prior art references teach or suggest each and every element of the '262 patent Asserted Claims. For each reference or combination of references suggested by each chart, Defendants indicate whether the prior art renders the claim anticipated and/or obvious pursuant to P.R. 3-3(b).

In addition to contending that the '262 patent Asserted Claims are invalid in view of the prior art references cited in the claim charts and Appendix D, Defendants further contend that the '262 patent Asserted Claims are invalid as anticipated and/or obvious under U.S.C. §§ 102 and/or 103 in view of public knowledge and uses and/or offers for sale of products and services related to the subject matter of the cited references. As discovery is ongoing, Defendants continue to investigate these items and to reserve the right to amend or supplement these contentions to include additional information or documents regarding such products and/or systems.

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• RB-14 (Chu 701) • RB-15 (Zhou 368) • RB-16 (Draft D1.0) • RB-17 (IEEE 802.11-2016) • RB-18 (IEEE 802.11-2016) • RB-19 (802.11ac) • RB-21 (Ahn 186) • Knowledge of a person of ordinary skill
RB-21 (Ahn 186)	• Asserted Patents Admitted Prior Art (APA) • RB-1 (Zhou 949) • RB-2 (Chu 517) • RB-3 (Asterjadhi 870) • RB-4 (Asterjadhi 1264) • RB-5 (Patil 1275) • RB-6 (Wu 121) • RB-7 (Patil 250) • RB-8 (Choi 244) • RB-9 (Zhang 1891) • RB-10 (Merlin 313) • RB-11 (Chun 590) • RB-12 (Kim 256) • RB-13 (Chun 133) • RB-14 (Chu 701) • RB-15 (Zhou 368) • RB-16 (Draft D1.0) • RB-17 (IEEE 802.11-2016) • RB-18 (IEEE 802.11-2016) • RB-19 (802.11ac) • RB-20 (Harada 962) • Knowledge of a person of ordinary skill

3. U.S. Patent No. 11,664,926

Pursuant to P.R. 3-3(a) and (b), Defendants identify in Appendix C the prior art references that render obvious the Asserted Claims of the '926 patent and include below exemplary combinations showing the obviousness of the '926 patent Asserted Claims in view of the prior art. To the extent Plaintiff contends that an element is not disclosed in any one of the anticipatory

references described in Appendix C, the limitation would have been obvious in light of the disclosures within the reference and the knowledge of one of skill in the art at the time of the '926 patent. Moreover, to the extent Plaintiff contends that an element is not disclosed in any one of the anticipatory references described in Appendix C, such reference may be combined with any other references listed in Appendix C for such element, thereby rendering the claims invalid for obviousness.

To the extent a finder of fact determines that a limitation of any of the '926 patent Asserted Claims is not disclosed by one of the references identified above pursuant to P.R. 3-3(a), the claim is nevertheless unpatentable as obvious because they contain nothing that constitutes a patentable innovation. To the extent a finder of fact determines that a limitation of the '926 patent Asserted Claims is not anticipated, it does not go beyond combining familiar elements according to known methods to achieve predictable results or does more than choose between clear alternatives known to those of ordinary skill in the art.

(a) Obviousness Rationale

For at least the reasons described in these contentions, it would have been obvious to one of ordinary skill in the art to combine any of a number of prior art references, including any combination of those prior art references identified in Appendix C along with the knowledge of one of ordinary skill in the art to meet the limitations of the '926 patent Asserted Claims. Moreover, as mentioned above, Defendants have not yet completed their search or discovery concerning additional prior art. As such, Defendants' inclusion of exemplary combinations does not preclude them from identifying other invalidating combinations as appropriate, and Defendants reserve the right to identify additional specific combinations as well as to detail and explain such combinations.

To the extent not anticipated, the '926 patent Asserted Claims represent no more than the

result of ordinary variations of the prior art. Defendants further believe that no showing of a specific motivation to combine prior art is required to combine the references disclosed above and in the attached charts, as each combination of art would have no unexpected results, and at most would simply represent a known alternative to one of skill in the art. *See KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 415-16 (2007) (rejecting the Federal Circuit's "rigid" application of the teaching, suggestion, or motivation to combine test, instead espousing an "expansive and flexible" approach). Indeed, the Supreme Court held that a person of ordinary skill in the art is "a person of ordinary creativity, not an automaton" and "in many cases a person of ordinary skill in the art will be able to fit the teachings of multiple patents together like pieces of a puzzle." *Id.* at 420-21. Nevertheless, in addition to the information contained elsewhere in these contentions, Defendants identify motivation and reason to combine the cited art.

One or more combinations of the prior art references identified in Appendix C would have been obvious because these references would have been combined using: known methods to yield predictable results; known techniques in the same way; a simple substitution of one known, equivalent element for another to obtain predictable results; and/or a teaching, suggestion, or motivation in the prior art generally. In addition, it would have been obvious to try combining the prior art references identified above because there were only a finite number of predictable solutions and/or because known work in one field of endeavor prompted variations based on predictable design incentives and/or market forces either in the same field or a different one. Further, the combinations of the prior art references identified in Appendix C would have been obvious because the combinations represent known potential options with a reasonable expectation of success.

Additional evidence that there would have been a motivation to combine the prior art

references identified above includes the interrelated teachings of multiple prior art references; common authorship; the effects of demands known to the design community or present in the marketplace; the existence of a known problem for which there was an obvious solution encompassed by the '926 patent Asserted Claims; the existence of a known need or problem in the field of the endeavor at the time of the alleged invention(s); and the background knowledge that would have been possessed by a person having ordinary skill in the art.

Thus, the motivation to combine the teachings of the prior art references disclosed in Appendix C is found in the references themselves and also in: (1) the nature of the problem being solved; (2) the express, implied and inherent teachings of the prior art; (3) the knowledge of persons of ordinary skill in the art; (4) the predictable results obtained in combining the different elements of the prior art; (5) the predictable results obtained in simple substitution of one known element for another; (6) the use of a known technique to improve similar devices, methods, or products in the same way; (7) the predictable results obtained in applying a known technique to a known device, method, or product ready for improvement; (8) the finite number of identified predictable solutions that had a reasonable expectation of success; and (9) known work in various technological fields that could be applied to the same or different technological fields based on design incentives or other market forces.

Additionally, it would be obvious to one of skill in the art to consult and/or combine any of the prior art listed in Appendix C because all of these references relate to the same area of technology and/or are from analogous art. The '926 patent Asserted Claims are directed to determining a type of response based on received information. '926 patent at 1:25-32. The '926 patent Asserted Claims merely united old elements, well known in the field, with no change in their respective function or result. Given the interrelated teachings of the prior art, the effects of

demands known to the design community or present in the marketplace, and the background knowledge possessed by a person having ordinary skill in the art, it would have been obvious for one of ordinary skill in the art to combine these familiar elements, disclosed and/or embodied in the prior art listed above to practice the '926 patent Asserted Claims. The references, like the '926 patent, are also reasonably pertinent to wireless communications issues in the MAC layer or issues related stations' different processing speed, requiring mechanisms such as padding to ensure each station has sufficient time to process the incoming frames.

Similarly, it would be obvious to one of skill in the art to consult and/or combine any of the prior art listed in Appendix C because all of these references are works by people in the same technical field. For example, many of the authors of the prior art references are members of the same IEEE 802.11ax High Efficiency (HE) working group. *See e.g.*, IEEE 802.11-16/0024r1 ("Stacey 0024") (identifying authors of prior art references (Table 3-B) as authors of draft specification). Moreover, one of ordinary skill in the art would have recognized that members of an IEEE working group frequently collaborate with, and build on, each other's work. In fact, some of the prior art references are comments regarding other members' submissions or proposed additions to the IEEE standard. Thus, one of ordinary skill in the art would have recognized that the works of the same IEEE working group are likely compatible or otherwise work harmoniously when combined.

All of the '926 patent Asserted Claims are directed to determining a type of response based on received information. '926 patent at 1:25-32. Implementing such technology, at least partially based on, but not limited by, the claim constructions implicit in Plaintiff's infringement contentions, was a common problem with a well-known solution before the alleged priority date of the '926 patent, as evidenced by the references in Appendix C. *See, e.g.*, Appendix C at [1pre].

One of ordinary skill in the art would have been motivated to combine any of the references in Appendix C because at the time of the alleged invention determining a type of response based on received information was a well-known technique in wireless communications. *See, e.g.*, Appendix C at [1h].

It was well-known to one of skill in the art before the time of the '926 patent, at least partially based on, but not limited by, the claim constructions implicit in Plaintiff's infringement contentions, that a wireless communication terminal can receive a PPDU (physical layer protocol data unit) including an A-MPDU (Aggregate-MAC Protocol Data Unit) in which one or more MPDUs (MAC Protocol Data Units) are aggregated. *See, e.g.*, Appendix C [1c].

It was well-known to one of skill in the art before the time of the '926 patent, at least partially based on, but not limited by, the claim constructions implicit in Plaintiff's infringement contentions, that the A-MPDU could include Ack policy information related to a block Ack for the one or more MPDUs, and one or more subframes. *See, e.g.*, Appendix C [1d].

It was well-known to one of skill in the art before the time of the '926 patent, at least partially based on, but not limited by, the claim constructions implicit in Plaintiff's infringement contentions, that each of the one or more subframes could include MPDU identifier information and an MPDU of the one or more MPDUs. *See, e.g.*, Appendix C [1e].

It was well-known to one of skill in the art before the time of the '926 patent, at least partially based on, but not limited by, the claim constructions implicit in Plaintiff's infringement contentions, that the MPDU identifier information could include an end of frame (EOF) field and a length field. *See, e.g.*, Appendix C [1f].

It was well-known to one of skill in the art before the time of the '926 patent, at least partially based on, but not limited by, the claim constructions implicit in Plaintiff's infringement

contentions, to transmit a response frame in response to the PPDU. *See, e.g.*, Appendix C [1g].

It was well-known to one of skill in the art before the time of the '926 patent, at least partially based on, but not limited by, the claim constructions implicit in Plaintiff's infringement contentions, that a type of the response frame could be determined as one of an Ack frame, a compressed BlockAck frame, and a multi-STA BlockAck frame according to a combination of a type of the MPDU determined by the EOF field and the length field, and the Ack policy information. *See, e.g.*, Appendix C [1h].

It was well-known to one of skill in the art before the time of the '926 patent, at least partially based on, but not limited by, the claim constructions implicit in Plaintiff's infringement contentions, that the compressed BlockAck frame could be used to transmit a response to the one or more MPDUs corresponding to one TID, when the one or more MPDUs correspond to the one TID among an one or more TIDs (traffic IDs). *See, e.g.*, Appendix C [1i].

It was well-known to one of skill in the art before the time of the '926 patent, at least partially based on, but not limited by, the claim constructions implicit in Plaintiff's infringement contentions, that the A-MPDU further could include the one or more TIDs corresponding to the one or more MPDUs. *See, e.g.*, Appendix C [2].

It was well-known to one of skill in the art before the time of the '926 patent, at least partially based on, but not limited by, the claim constructions implicit in Plaintiff's infringement contentions, that the type of the response frame could be determined by further considering a number of TIDs indicating an immediate response among the one or more TIDs. *See, e.g.*, Appendix C [3].

It was well-known to one of skill in the art before the time of the '926 patent, at least partially based on, but not limited by, the claim constructions implicit in Plaintiff's infringement

contentions, that the type of the response frame could be the Ack frame when the A-MPDU includes only one TID indicating the immediate response and the Ack policy information indicates a normal Ack. *See, e.g.*, Appendix C [4].

It was well-known to one of skill in the art before the time of the '926 patent, at least partially based on, but not limited by, the claim constructions implicit in Plaintiff's infringement contentions, that the type of the response frame could be the compressed BlockAck frame when a number of the TIDs indicating the immediate response is one or more and the one or more TIDs are the same. *See, e.g.*, Appendix C [5].

It was well-known to one of skill in the art before the time of the '926 patent, at least partially based on, but not limited by, the claim constructions implicit in Plaintiff's infringement contentions, that the MPDU delimiter information could be first MPDU delimiter information in which a value of the EOF field is 1 and a value of the length field is non-zero, or second MPDU delimiter information in which the EOF field value is 0. *See, e.g.*, Appendix C [6].

It was well-known to one of skill in the art before the time of the '926 patent, at least partially based on, but not limited by, the claim constructions implicit in Plaintiff's infringement contentions, that the type of the response frame could be determined by further considering whether the A-MPDU includes a subframe including the first MPDU delimiter information, and whether the A-MPDU includes at least one subframe including the second MPDU identifier information.. *See, e.g.*, Appendix C [7].

In addition, the prior art also provided sets of finite, identified, predictable solutions for known problems that would have been obvious to those of ordinary skill to try with a reasonable expectation of success. For example, it would have been obvious to one of skill in the art at the time that A-MPDUs would include Ack policy information related to a block Ack for the one or

more MPDUs, and one or more subframes, that each of the one or more subframes could include MPDU identifier information and an MPDU of the one or more MPDUs, and that the MPDU identifier information could include an end of frame (EOF) field and a length field. *See, e.g.,* Appendix C [1d]-[1f]. It would have been obvious to one of skill in the art at the time to transmit a response frame in response to a received PPDU. *See, e.g.,* Appendix C [1g]. It would have been obvious to one of skill in the art at the time to use the EOF field and the length field, and Ack policy information to determine a type of a response frame as one of an Ack frame, a compressed BlockAck frame, and a multi-STA BlockAck frame. *See, e.g.,* Appendix C [1h]. It would have been obvious to one of skill in the art at the time to use the compressed BlockAck frame to transmit a response to the one or more MPDUs corresponding to one TID, when the one or more MPDUs correspond to the one TID among an one or more TIDs (traffic IDs). *See, e.g.,* Appendix C [1i].

It would have been obvious to one of skill in the art at the time to further determine the type of the response frame by considering a number of TIDs indicating an immediate response among the one or more TIDs, or by considering whether the A-MPDU includes one or more subframes including MPDU delimiter information. *See, e.g.,* Appendix C [3], [7].

It would have been obvious to one of skill in the art at the time to include one or more TIDs in the A-MPDU. *See, e.g.,* Appendix C [2].

It would have been obvious to one of skill in the art at the time to respond with an Ack frame when the A-MPDU includes only one TID indicating the immediate response and the Ack policy information indicates a normal Ack, and to respond with the compressed BlockAck frame when a number of the TIDs indicating the immediate response is one or more and the one or more TIDs are the same *See, e.g.,* Appendix C [4], [5].

It would have been obvious to one of skill in the art at the time to include, in the MPDU

delimiter information, a value of the EOF field as 1 and a value of the length field as non-zero, or second MPDU delimiter information in which the EOF field is 0. A finite number of solutions exist as to the different values that can be stored in these fields. *See, e.g.*, Appendix C [6].

The prior art references provide motivations to combine with reasonable expectation of success because they describe the field of the '926 patent, teach improvements, explain desired features, and even expressly state that one of skill in the art would be able to apply their teachings to related systems or methods. *See, e.g.*, Chu 951 at [0004] (“Various wireless technologies is [sic] described in detail in the IEEE 802.11 Standards, including, for example, the IEEE Standards 802.11/a/b/g, 802.11n, and 802.11ac and their updates and amendments, as well as the IEEE Standard 802.11ax now in the process of being adopted, all of which are collectively incorporated herein fully by reference.”); Asterjadhi 813 at [0026] (“The various aspects described herein may apply to any communication standard, such as WiFi, or more generally, any member of the IEEE 802.11 family of wireless protocols.”); Draft D1.0 (draft of the 802.11ax standard from the IEEE); Cherian 0024, Stacey 0024, 802.11ac-2013, 802.11-2016, Merlin 0366, Chu 1185, Asterjadhi 0616, and Chu 0069 (all IEEE working group documents).

Further, the prior art references provide motivations to combine with reasonable expectation of success because they explicitly suggest utilizing the teachings and disclosures of other references. *See, e.g.*, Chu 951 at [0004] (“Various wireless technologies is [sic] described in detail in the IEEE 802.11 Standards, including, for example, the IEEE Standards 802.11/a/b/g, 802.11n, and 802.11ac and their updates and amendments, as well as the IEEE Standard 802.11ax now in the process of being adopted, all of which are collectively incorporated herein fully by reference.”); Asterjadhi 813 at [0026] (“The various aspects described herein may apply to any communication standard, such as WiFi, or more generally, any member of the IEEE 802.11 family

of wireless protocols.”); Draft D1.0 (draft of the 802.11ax standard from the IEEE); Cherian 0024, Stacey 0024, 802.11ac-2013, 802.11-2016, Merlin 0366, Chu 1185, Asterjadhi 0616, and Chu 0069 (all IEEE working group documents).

In accordance with these advances, the prior art could have been combined according to methods known to those of ordinary skill within the field of the ’926 patent to yield predictable results. The use of information contained in an A-MPDU to determine a type of response frame could have been predictably achieved by one of ordinary skill at the time of the alleged invention. *See, e.g.*, Appendix C [1h]. Doing so would have had the predictable result of improving communications performance and/or efficiency in conventional Wi-Fi and other wireless systems. It would have been obvious to a skilled artisan that the addition of more complicated A-MPDU configurations would require additional logic to determine a type of response frame. *See, e.g.*, Chu 951 at [0045], [0049]-[0050], [0053], [0056]-[0057], [0060]-[0069], [0072]-[0075], [0077]-[0085], [0089]-[0099], [0106]-[0111], [0159], Figures 4B, 6B, 7B, 9C, 10C, 12B; Chu 224 at 8:39-58, 9:56-67, 10:1-32; Asterjadhi 813 at [0060], [0073], [0078], [0082]-[0083], [0085]; Kim 678 at [0002], [0007], [0011], [0016], [0099], [0108], [0110]-[0111]; Cherian 0024 at 7-11; Stacey 0024 at 13-15, 24-26, 40, 47-48.

One of ordinary skill in the art would have been aware of these various applications, and would have been able to select appropriate attributes of one for inclusion in another. Those of ordinary skill in the art could have employed known techniques to improve similar prior art devices in the same way as claimed in the ’926 patent.

In addition, one of ordinary skill in the art would be motivated to combine the prior art references with reasonable expectation of success because the elements found in the Asserted Claims of the ’926 patent were well known in the art. Indeed, the listed inventors of the ’926

patent admitted as much in the specification of the '926 patent. *See, e.g.*, '926 patent at 1:36-2:50.

Further, one of ordinary skill in the art would be motivated to combine the prior art references that explicitly discuss a multi-STA BlockAck with any of the references that do not explicitly discuss a multi-STA BlockAck because multi-STA BlockAck frames were proposed and adopted early during the development of 802.11ax. *See, e.g.*, Merlin 0366 at 12-13 (describing proposed multi-STA BlockAck frame formats in March 2015); Draft D1.0 at 158 (including language related to Multi-STA BlockAck frames in November 2016 draft of 802.11ax). The 802.11ax amendment required a mechanism for multiplexing downlink acknowledgments sent in response to uplink multi-user transmissions. *See, e.g.*, Merlin 0366 at 8. In other words, the standard needed a mechanism for acknowledging multiple stations after receiving uplink multi-user PPDU. *Id.* The draft standard and the references included in these invalidity contentions provide such a mechanism—thus, a person of ordinary skill in the art would have been motivated to combine these multi-STA BlockAck frame references with prior versions of the standard and/or references that describe the process for acknowledging aggregate MPDUs and would have a reasonable expectation of success. *See, e.g.*, 802.11-2012, 802.11ac-2013, and 802.11-2016. A person of ordinary skill in the art would have further had a motivation to combine references describing a multi-STA BlockAck frame with references that describe the logic by which a receiver would determine a response frame type, because if multiple different types of PPDU with different characteristics are supported, the system requires a mechanism for determining what type of response frame to use for a given PDU type. *See, e.g.*, Chu 951 at [0069]; Draft D1.0 at 160; Chu 1185 at 5; Chu 0069 at 9-12; Asterjadhi 0616 at 9-11; 17-20.

Moreover, it would have been obvious to one of ordinary skill in the art at the time to combine the teachings of a document submitted as part of the IEEE 802.11ax standard

development process (*e.g.*, working group documents, draft specifications, technical submissions, working group meeting presentations) with a system implementing an older IEEE standard such as IEEE 802.11ac or a draft standard, and would have had a reasonable expectation of success. For example, one of ordinary skill in the art would have been motivated to combine the teachings of a document submitted as part of the IEEE 802.11ax standard development process with a real wireless communications hardware/device to yield a working wireless communication system with the improvements and benefits offered by the new standard, and would have had a reasonable expectation of success. *See, e.g.*, Cherian 0024, Stacey 0024, Merlin 0366, Draft D1.0, Chu 1185, Asterjadhi 0616, Chu 0069; RC-13 – RC-22. In another example, one of ordinary skill in the art would have been motivated to simply substitute an older version of a wireless module implemented on a wireless device/hardware with one implementing a newer version of the standard that addresses the shortcomings of the older standard. In yet another example, one of ordinary skill in the art would have been motivated to apply the known techniques disclosed in the documents submitted as part of the IEEE 802.11ax standard development process to an older wireless communications system implementing IEEE 802.11ac to yield the predictable results of improved wireless communication performance, and would have had a reasonable expectation of success. Further, one of ordinary skill in the art would have been prompted by the teachings in the documents submitted as part of the IEEE 802.11ax standard development process to modify the wireless communications hardware/device to meet market demands for improved wireless performance.

It would have been obvious to one of ordinary skill in the art at the time to combine teachings of a document submitted as part of IEEE 802.11ax standard development process (*e.g.*, working group documents, draft specification, technical submissions, working group meeting

presentations) with teachings of a reference pertaining to hardware/devices (*e.g.*, non-access-point stations) for wireless communications (*e.g.*, wireless local area network (WLAN)), and would have had a reasonable expectation of success. *See, e.g.*, Cherian 0024, Stacey 0024, Merlin 0366, Draft D1.0, Chu 1185, Asterjadhi 0616, Chu 0069; RC-13 – RC-22. For instance, a person of ordinary skill would have been motivated to combine the teachings of a document submitted as part of the IEEE 802.11ax standard development process—which generally address narrow technical issues and solutions—with references disclosing WLAN devices and hardware more broadly (*e.g.*, devices with transceivers and configurable processors) to yield a blueprint for a working device that addresses the technical problem disclosed in the IEEE 802.11ax standard development document, and would have had a reasonable expectation of success. *See, e.g.*, Cherian 0024, Stacey 0024, Merlin 0366, Draft D1.0, Chu 1185, Asterjadhi 0616, Chu 0069; RC-13 – RC-22. Such a combination amounts to combining known prior art elements according to known methods to yield predictable results. Further, to the extent any prior art WLAN devices/hardware documents disclose deficiencies or technical issues with the state of the art, one of ordinary skill in the art would have been prompted to combine these references with the teachings in documents submitted as part of the IEEE 802.11ax standard development process to meet market demands for improved wireless performance, and would have had a reasonable expectation of success. *See, e.g.*, Cherian 0024, Stacey 0024, Merlin 0366, Draft D1.0, Chu 1185, Asterjadhi 0616, Chu 0069; RC-13 – RC-22. This disclosure of deficiencies and/or technical issues would provide a teaching, suggestion, or motivation for a person of ordinary skill to modify the prior art reference based on the IEEE 802.11ax standard working documents.

It would have been obvious to one of ordinary skill in the art at the time to combine teachings of a document submitted as part of IEEE 802.11ax standard development process (*e.g.*,

working group documents, draft specification, technical submissions, working group meeting presentations) with teachings of another document submitted as part of IEEE 802.11ax standard development process, and would have had a reasonable expectation of success. *See, e.g.*, Cherian 0024, Stacey 0024, Merlin 0366, Draft D1.0, Chu 1185, Asterjadhi 0616, Chu 0069; RC-13 – RC-22. For instance, considering the common underlying technical subject matter of the IEEE 802.11ax standard development documents, it would be obvious to one of ordinary skill to try combining the teachings of multiple documents. In doing so, a person of ordinary skill would have a reasonable expectation of success. Moreover, given the common goals and design incentives among authors of IEEE 802.11ax standard development documents (*e.g.*, improving WLAN device performance), a person of ordinary skill would find it obvious to combine the technical solutions disclosed in multiple IEEE 802.11ax standard development documents, and would have had a reasonable expectation of success. *See, e.g.*, Cherian 0024, Stacey 0024, Merlin 0366, Draft D1.0, Chu 1185, Asterjadhi 0616, Chu 0069; RC-13 – RC-22. Further, given the additive nature of the IEEE standard development process, a person of ordinary skill would have understood that various IEEE 802.11ax standard development documents could be combined to create a cohesive solution. *See, e.g.*, Cherian 0024, Stacey 0024, Merlin 0366, Draft D1.0, Chu 1185, Asterjadhi 0616, Chu 0069; RC-13 – RC-22. Thus, a person of ordinary skill would have a reasonable expectation of success in combining the teachings in these documents.

Any reference or combination of references that anticipates or makes obvious an asserted independent claim also makes obvious any asserted claim dependent on that independent claim, as the element of each dependent '926 patent Asserted Claim was known by a person of ordinary skill at the time of the alleged invention, at least partially based on, but not limited by, the claim constructions implicit in Plaintiff's infringement contentions, and it would have been obvious to

combine those known elements with the independent claims at least as a matter of common sense and routine innovation. Accordingly, Defendants contend that each Asserted Claim would have been obvious not only by the combinations described in these contentions, but also by any combination of references that renders obvious an Asserted Claim. These combinations would have had a reasonable expectation of success.

In addition to the specific examples of motivation provided above, Defendants reserve the right to rely on the disclosures of the references listed in Appendix C for additional motivation to combine. The above-identified examples of combinations are given merely to illustrate various motivations to combine and are not intended to provide an exhaustive list of every possible combination to which the motivation may apply. Defendants reserve the right to contend that the above-described motivations to combine apply to other combinations at the appropriate time, i.e., in expert reports regarding invalidity.

Combination of Chu 951 (RC-1) with Draft D1.0 (RC-9) or Chu 1185 (RC-10)

For example, a POSITA would have been motivated and found it obvious to combine Chu with either Draft D1.0 or Chu 1185 as doing so would have merely involved combining prior art elements according to known methods to yield predictable results, as explained in more detail below. In particular, a POSITA would have been motivated to combine the protocol for transmitting and receiving a multi-TID A-MPDU (as described in each of Draft D1.0 and Chu 1185) containing MPDUs with nonzero delimiters having differing EOF values and corresponding response mechanisms (e.g., Multi-STA BlockAck) into Chu's system, and would have found the combinations predictable with a reasonable expectation of success.

First, for example, adopting Draft D1.0 or Chu 1185 enhances alignment and interoperability of Chu's system with the evolving IEEE 802.11ax standards. Chu explicitly

discloses that its system incorporates by reference various IEEE 802.11 standards and explicitly discloses its processors as communicating according to the IEEE 802.11ax communication protocol. Chu 951 at [0035]-[0036], [0004]. Thus, it would have been obvious and predictable for a POSITA to modify or update Chu's disclosed system based on features described in the 802.11ax specifications, including those relating to A-MPDU and acknowledgment mechanisms, as described in Draft D1.0 and Chu 1185. Chu 951 at [0035]-[0036], [0004]; Chu 1185 at 4-5.

Further, for example, a POSITA would have found the combinations predictable not only because Chu operates according to the 802.11 ax protocol, but also because the other 802.11 protocols in Chu are compatible with the 802.11ax protocol. Chu 951 at [0004], [0035]-[0036]. For example, the 802.11ax protocol builds upon and maintains backward compatibility with earlier 802.11 protocols, allowing 802.11-based systems to be extended or adapted to newer features.

Second, for example, incorporating the IEEE 802.11ax protocol enables more flexible and efficient multi-TID A-MPDU aggregation. While Chu supports multi-TID A-MPDU, with MPDUs having EOF value of 1 and each soliciting an Ack response, Draft D1.0 and Chu 1185 describe an enhanced multi-TID A-MPDU format that allows utilization of different types of MPDUs with EOF values of 1 and 0 and that solicit both Ack and BlockAck responses within a single A-MPDU. Chu 951 at [0069], [0074], Draft D1.0 at 219-220 (193-194); Chu 1185 at 4-5. Specifically, the multi-TID A-MPDU in Draft D1.0 or Chu 1185 aggregates MPDUs including (1) sequences of MPDUs that have EOF values of 0 and solicit BlockAck, and (2) standalone MPDUs that have EOF values of 1 and solicit Ack, all within a single A-MPDU. *Id.*

Moreover, a POSITA would have found the combinations predictable based on instructions provided in Draft D1.0 and Chu 1185, which Chu incorporates "fully by reference." Chu 951 at [0004]. Draft D1.0 and Chu 1185 provide instructions based on the mix of EOF values for

determining when to use a Multi-STA BlockAck response. Specifically, when MPDUs with nonzero length delimiters having differing EOF values (EOF=1 and EOF=0) are aggregated, Draft D1.0 or Chu 1185 teaches that a Multi-STA BlockAck is triggered. Draft D1.0 at 219-220 (193-194); Chu 1185 at 4-5. In addition, Draft D1.0 and Chu 1185 further disclose instructions for responding with a Multi-STA BlockAck frame, including the use of “One Per STA Info field,” for example, to indicate an Ack for nonzero length MPDU (with EOF=1) and BlockAck for nonzero length MPDU (with EOF=0), which are compatible with Chu’s multi-TID block acknowledgment frame structure featuring per-TID information and acknowledgment type subfields. Draft D1.0 at 219-220 (193-194); Chu 1185 at 4-5. These rules build upon the existing A-MPDU acknowledgment mechanism already disclosed in Chu, in which EOF and length fields are used to distinguish acknowledgment policy and response types. See Draft D1.0 at 219-220 (193-194); Chu 1185 at 4-5; Chu 951 at [0073]-[0076].

Third, for example, Draft D1.0 and Chu 1185 disclose an additional determination point for response frame determination. Particularly, Chu uses EOF and length fields to distinguish Ack from BlockAck, but does not distinguish Multi-STA BlockAck context if MPDUs having different EOFs (e.g., EOF=0 and EOF=1) are present. Draft D1.0 or Chu 1185 cures this by disclosing an additional rule that makes such a distinction and provides a different type of response when MPDUs having EOF values are present. See Draft D1.0 at 219-220 (193-194); Chu 1185 at 4-5; Chu 951 at [0073]-[0076].

Fourth, for example, a POSITA would have found the combinations obvious and predictable because the response frames disclosed in the 802.11ax framework are the same as, or similar to, those in Chu, which builds upon the established A-MPDU format and associated acknowledgment frame types, including Ack response, immediate BlockAck response (e.g.,

compressed BlockAck response), and multi-TID block acknowledgment response (e.g., Multi-STA BlockAck response). Accordingly, this compatibility would have allowed Chu to readily incorporate the acknowledgment mechanisms defined in Draft D1.0 or Chu 1185 without requiring a system redesign.

Fifth, for example, the combinations would have been obvious and predictable because Chu, Draft D1.0, and Chu 1185 utilize similar systems and component. Because all three references adopt a high-efficiency (HE) wireless framework, using technologies such as Orthogonal Frequency Division Multiplexing (OFDM), Orthogonal Frequency Division Multiple Access (OFDMA), Multiple Input Multiple Output (MIMO), and Very High Throughput (VHT), incorporating the teachings of Draft D1.0 or Chu 1185 into Chu would have been obvious and predictable and only involve routine skill of one in the art. Chu 951 at [0004], [0035], [0045]-[0053]; Chu 1185 at 3-5; *see e.g.*, Draft D1.0 at 35 (9), 171 (145), 235-239 (209-213).

Sixth, for example, a POSITA would have pursued the combinations because doing so would have merely involved the application of known techniques (e.g., identifying a multi-TID A-MPDU based on EOF, length, policy information, and/or number of TIDs) to a known structure (e.g., (1) the A-MPDU described in Chu, configured to further include nonzero MPDU delimiters with differing EOF values along with existing policy framework (e.g., Ack/BlockAck), and (2) Chu's receiving terminal (AP or client station) configured to receive the A-MPDU, process the A-MPDU, and determine response frames based on the received A-MPDU) to yield predictable results (e.g., determining a multi-STA block acknowledgment response frame). *See KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007).

For at least the reasons described above, it would have been obvious to one of ordinary skill in the art to combine each prior art reference listed in Appendix C with any other reference

or references listed in Appendix C along with the knowledge of one of ordinary skill in the art to arrive at the inventions claims in the '926 patent. For example, and without limitation, the Asserted Claims of the '926 patent would have been obvious to one of ordinary skill in the art in view of the following combinations:

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
Chu 951	• Asserted Patents Admitted Prior Art (APA) • Asterjadhi 813 • Kim 678 • Cherian 0024 • Stacey 0024 • 802.11ac-2013 • 802.11-2016 • Merlin 0366 • Draft D1.0 • Chu 1185 • Asterjadhi 0616 • Chu 0069 • Knowledge of a person of ordinary skill
Asterjadhi 813	• Asserted Patents Admitted Prior Art (APA) • Chu 951 • Kim 678 • Cherian 0024 • Stacey 0024 • 802.11ac-2013 • 802.11-2016 • Merlin 0366 • Draft D1.0 • Chu 1185 • Asterjadhi 0616 • Chu 0069 • Knowledge of a person of ordinary skill
Kim 678	• Asserted Patents Admitted Prior Art (APA) • Chu 951 • Asterjadhi 813 • Cherian 0024 • Stacey 0024

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• 802.11ac-2013 • 802.11-2016 • Merlin 0366 • Draft D1.0 • Chu 1185 • Asterjadhi 0616 • Chu 0069 • Knowledge of a person of ordinary skill
Cherian 0024	• Asserted Patents Admitted Prior Art (APA) • Chu 951 • Asterjadhi 813 • Kim 678 • Stacey 0024 • 802.11ac-2013 • 802.11-2016 • Merlin 0366 • Draft D1.0 • Chu 1185 • Asterjadhi 0616 • Chu 0069 • Knowledge of a person of ordinary skill
Stacey 0024	• Asserted Patents Admitted Prior Art (APA) • Chu 951 • Asterjadhi 813 • Kim 678 • Cherian 0024 • 802.11ac-2013 • 802.11-2016 • Merlin 0366 • Draft D1.0 • Chu 1185 • Asterjadhi 0616 • Chu 0069 • Knowledge of a person of ordinary skill
802.11ac-2013 ³³	• Asserted Patents Admitted Prior Art (APA)

³³ This combination of references further means that any prior art systems listed in Table 2-C that are Wi-Fi 5 (802.11ac) enabled and capable can further be combined with one or more prior art references noted in the second column in this row.

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Chu 951 • Asterjadhi 813 • Kim 678 • Cherian 0024 • Stacey 0024 • 802.11-2016 • Merlin 0366 • Draft D1.0 • Chu 1185 • Asterjadhi 0616 • Chu 0069 • Knowledge of a person of ordinary skill
802.11-2016	• Asserted Patents Admitted Prior Art (APA) • Chu 951 • Asterjadhi 813 • Kim 678 • Cherian 0024 • Stacey 0024 • 802.11ac-2013 • Merlin 0366 • Draft D1.0 • Chu 1185 • Asterjadhi 0616 • Chu 0069 • Knowledge of a person of ordinary skill
Merlin 0366	• Asserted Patents Admitted Prior Art (APA) • Chu 951 • Asterjadhi 813 • Kim 678 • Cherian 0024 • Stacey 0024 • 802.11ac-2013 • 802.11-2016 • Draft D1.0 • Chu 1185 • Asterjadhi 0616 • Chu 0069 • Knowledge of a person of ordinary skill
Draft D1.0	• Asserted Patents Admitted Prior Art (APA)

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Chu 951 • Asterjadhi 813 • Kim 678 • Cherian 0024 • Stacey 0024 • 802.11ac-2013 • 802.11-2016 • Merlin 0366 • Chu 1185 • Asterjadhi 0616 • Chu 0069 • Knowledge of a person of ordinary skill
Chu 1185	• Asserted Patents Admitted Prior Art (APA) • Chu 951 • Asterjadhi 813 • Kim 678 • Cherian 0024 • Stacey 0024 • 802.11ac-2013 • 802.11-2016 • Merlin 0366 • Draft D1.0 • Asterjadhi 0616 • Chu 0069 • Knowledge of a person of ordinary skill
Asterjadhi 0616	• Asserted Patents Admitted Prior Art (APA) • Chu 951 • Asterjadhi 813 • Kim 678 • Cherian 0024 • Stacey 0024 • 802.11ac-2013 • 802.11-2016 • Merlin 0366 • Draft D1.0 • Chu 1185 • Chu 0069 • Knowledge of a person of ordinary skill
Chu 0069	• Asserted Patents Admitted Prior Art (APA)

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Chu 951 • Asterjadhi 813 • Kim 678 • Cherian 0024 • Stacey 0024 • 802.11ac-2013 • 802.11-2016 • Merlin 0366 • Draft D1.0 • Chu 1185 • Asterjadhi 0616 • Knowledge of a person of ordinary skill

4. U.S. Patent No. 12,004,262

A Pursuant to P.R. 3-3(a) and (b), Defendants identify in Appendix D the prior art references that render obvious the Asserted Claims of the '262 patent and include below exemplary combinations showing the obviousness of the '262 patent Asserted Claims in view of the prior art. To the extent Plaintiff contends that an element is not disclosed in any one of the anticipatory references described in Appendix D, the limitation would have been obvious in light of the disclosures within the reference and the knowledge of one of skill in the art at the time of the '262 patent. Moreover, to the extent Plaintiff contends that an element is not disclosed in any one of the anticipatory references described in Appendix D, such reference may be combined with any other references listed in Appendix D for such element, thereby rendering the claims invalid for obviousness.

To the extent a finder of fact determines that a limitation of any of the '262 patent Asserted Claims is not disclosed by one of the references identified above pursuant to P.R. 3-3(a), the claim is nevertheless unpatentable as obvious because they contain nothing that constitutes a patentable innovation. To the extent a finder of fact determines that a limitation of the '262 patent Asserted

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