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Intel Corporation, Apple Inc.

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

INTEL CORPORATION, APPLE INC.,

Plaintiffs,

v.

FORTRESS INVESTMENT GROUP LLC, FORTRESS CREDIT CO. LLC, UNILOC 2017 LLC, UNILOC USA, INC., UNILOC LUXEMBOURG S.A.R.L., VLSI TECHNOLOGY LLC, INVT SPE LLC, INVENTERGY GLOBAL, INC., and IXI IP, LLC,

Defendants.

Case No. 3:19-cv-07651-EMC

SECOND AMENDED COMPLAINT

JURY TRIAL DEMANDED

REDACTED VERSION OF DOCUMENT SOUGHT TO BE SEALED

Plaintiffs Intel Corporation ("Intel") and Apple Inc. ("Apple"), on personal knowledge as to their own acts, and on information and belief as to all other acts based on their own and their attorneys' investigation, by and through their attorneys, allege as follows:

INTRODUCTION

1. Intel and Apple bring this action under Section 1 of the Sherman Act and Sections 4, 7, and 16 of the Clayton Act, 15 U.S.C. §§ 1, 15, 18, and 26; under Cal. Bus. & Prof. Code § 17200 et seq.; and to prevent and restrain Defendants' anticompetitive conduct and other violations of the law.

2. Rather than promote the progress of science and useful arts, patent assertion entities ("PAEs"), including Defendants, that aggressively pursue meritless litigation have long been recognized to harm and deter innovation. For example, one study estimated that patent litigation brought by PAEs in the United States resulted in expenditures of $29 billion in 2011 for licensing fees, legal fees, and other costs of responding to PAE litigation.[1] Another study found, by looking at the impact on stock price, that lawsuits by PAEs from 1990 through 2010 were responsible for the defendants losing half a trillion dollars.[2] And those losses are not offset by corresponding gains to patent holders that promote innovation. One study found that the profits received by PAEs from litigation amounted to less than 10% of the lost share value of companies targeted by the PAEs.[3]

3. Based on such studies, the President's Council of Economic Advisers, the National Economic Council, and the Office of Science & Technology Policy warned in a 2013 report that "Patent Assertion Entities . . . focus on aggressive litigation, using such tactics as: . . . creating shell companies that make it difficult for defendants to know who is suing them; and asserting that

[1] James Bessen; Michael J. Meurer, *The Direct Costs from NPE Disputes*, 99 Cornell L. Rev. 387, 389-90 (2014).
[2] James Bessen; Jennifer Ford; Michael J. Meurer, *The Private and Social Costs of Patent Trolls*, 34 Regulation 26, 31 (2011).
[3] Bessen & Meurer, *supra* note 1, at 411.

their patents cover inventions not imagined at the time they were granted."[4] Further, the report concluded that PAEs "have had a negative impact on innovation and economic growth."[5]

4. Recognition of the threat posed by improper patent assertions has led to judicial determinations clarifying the law and legislative changes with the potential to curb meritless litigation. In 2011, the U.S. Court of Appeal for the Federal Circuit struck down the overreaching presumption offered by Defendant Uniloc USA, Inc. ("Uniloc USA") that, as a rule of thumb, infringement of a single patent warranted twenty-five percent of the product's profit. The same year, Congress enacted the Leahy Smith America Invents Act, including *inter partes* review procedures through which the Patent Trial and Appeal Board ("PTAB") of the U.S. Patent & Trademark Office ("USPTO") can be asked to review whether issued patents are actually valid. And in 2014, the Supreme Court held in *Alice Corp. v. CLS Bank International*, 573 U.S. 208 (2014), that inventions directed to abstract ideas could not be patented unless they contain an "inventive concept" beyond implementation of the abstract idea in computer code.

5. In 2016, the Council of Economic Advisers returned to the subject of PAEs, observing that research since 2013 continues to show "that a substantial amount of patent litigation in the United States, often with little substantive merit, often arises from certain types of NPEs [non-practicing entities] called 'patent assertion entities.'"[6] But the Council noted that legislative and judicial actions, such as those described above, are "promising in that all of them should reduce the level of frivolous patent litigation."[7]

6. In the face of these challenges, PAEs have evolved. PAEs have increasingly been partnering with investment firms to fuel their litigation. This trend is part of a larger trend in the growth of third-party investment in litigation generally. Although the precise scale of investment

[4] Executive Office of the President, *Patent Assertion and U.S. Innovation* at 1 (June 2013).
[5] *Id*. at 2.
[6] Council of Economic Advisers Issue Brief, *The Patent Litigation Landscape: Recent Research and Developments* at 2 (March 2016).
[7] *Id*. at 7.

in litigation is unknown, estimates put it in the tens of billions of dollars.[8] As one example, the largest litigation investor reported having investments of $2.8 billion in 2019.[9]

7. Having deep-pocketed investment firms standing behind them has made PAEs only more aggressive. Indeed, to meet the expectations of their new investors for high returns, PAEs must act ever more aggressively. These new investors are content to incur loss after loss so long as they have the chance to hit a windfall reward that will justify their investment. Patent assertion thus becomes simply a numbers game disassociated from the merits of the underlying patents, with PAEs and their investors betting that serial assertions with aggressive demands will strike a jackpot eventually making up for many other losses. Consistent with this strategy, assertions by non-practicing entities have increased in each of the last three years.[10]

8. A central player in this emerging investment strategy is Fortress Investment Group LLC ("Fortress"). Fortress is an investment firm that went public in 2007. Fortress's shares traded at over $35 per share after going public, but one decade later, Fortress was struggling with poor returns and its share price had plummeted to around $5 per share in 2017. Fortress was acquired that year by SoftBank Group Corp. ("SoftBank") for $3.3 billion. Fortress contends it is "a leading, highly diversified global investment manager" and claims to have approximately $49.9 billion of assets under management as of the third quarter of 2020.[11] One way in which Fortress has tried to turn around its performance and justify SoftBank's investment in it is through increased speculation on patent assertions.

9. Intel and Apple bring this complaint to end a campaign of anticompetitive patent aggregation by Fortress and a web of PAEs that Fortress owns or controls. Fortress has used its

[8] Brian Baker, *In low-yield environment, litigation finance booms*, MarketWatch (Aug, 21, 2018) (reporting an estimate of $50 to $100 billion invested in litigation finance); L.M. Sixel, *Private equity's latest investment? Lawsuits*, Houston Chronicle (May 18, 2018) (reporting an estimate of $30 billion invested in lawsuits).

[9] Burford Capital, *Investor Presentation – 1H 2019 Results* at 5 (July 25, 2019).

[10] Unified Patents, *2020 Patent Dispute Report: Year in Review* (Jan. 1, 2021) ("NPE-related litigation increased by 17% from 2019, with 2,291 cases. This is a high since 2016. Also, the total number of patent disputes increased by nearly 12% from 2019 and nearly matched 2016.").

[11] Fortress, https://www.fortress.com/about (last visited Feb. 26, 2021).

stable of PAEs to aggregate a massive but obscured portfolio of patents that purportedly read on high-tech consumer and enterprise electronic devices and components or software therein and processes used to manufacture them. As detailed below, that portfolio includes enormous numbers of patents that are substitutes and complements for one another in antitrust markets consisting of patents that perform specific functions in electronic products. Before Defendants' patent aggregation scheme, competition among diffuse owners of those patents constrained the royalties that those predecessor owners could demand and obtain from product suppliers. By eliminating competition, Defendants' aggregation scheme has resulted in product suppliers having very few if any alternatives to Defendants to license patents in many of those antitrust markets, resulting in inflated royalties and reduced output in those markets (as well as in downstream product markets) and for licenses to Defendants' overall portfolio.

10. As further described below, the success of this aggregation and its anticompetitive effects can be seen in the disparity between (1) the prices at which Fortress and Defendants acquired substitute and complementary patents and/or valued such patents ***before aggregation*** and (2) the significantly higher amounts that Defendants have obtained as royalties or sought in damages for these same patents ***after they have been aggregated*** under Fortress's control in the relevant patent markets.

11. Litigation damages demands should reflect the patent holder's good faith valuation of its patent in the market. As the Federal Circuit has instructed, a trial court "must carefully tie proof of damages to the claimed invention's footprint in the market place."[12] Further, Defendants' damages requests and contentions, described in more detail below, are submitted as part of court-ordered exchanges of information between parties where the lawyers acting for Defendants are under ethical and professional obligations to litigate with candor. For example, American Bar Association Model Rule of Professional Conduct 4.1 provides that "[i]n the course of representing a client a lawyer shall not knowingly . . . make a false statement of material fact or law to a third

[12] *ResQNet.com, Inc. v. Lansa, Inc.*, 594 F.3d 860, 869 (Fed. Cir. 2010).

person[.]" Likewise, under Model Rule of Professional Conduct 3.1, a lawyer "shall not knowingly . . . offer evidence that the lawyer knows to be false." Accordingly, Defendants' damages demands should represent their good faith estimate of the perceived value of their patents in the relevant markets and the amounts they genuinely expect to receive from Apple or Intel if they prevail in litigation. Even if Intel and Apple dispute these figures (and liability for the asserted patents), they must take them seriously because Defendants have indicated they will pursue them. Indeed, it is a core component of Fortress's anticompetitive scheme to aggressively seek and to obtain such supracompetitive royalties after aggregating patents. Reflecting the seriousness with which Intel takes damage demands, it has disclosed to investors in its securities filings VLSI's damages demands in various cases. Recently, VLSI was awarded $2.175 billion in damages against Intel based on a jury's finding that Intel infringed two VLSI patents. Although Intel denies that it infringes and that the damages award is proper (and the decision remains subject to appeal), the jury awarded VLSI close to what it sought from Intel, demonstrating that damages demands are not just requests.

12. In addition, almost all of the patents that Defendants have aggregated and asserted against Intel and Apple were not previously asserted by their prior owners—sophisticated companies, many of which had experience asserting patents. The prior owners' behavior indicated a willingness to litigate when that litigation was in their profit-maximizing interests. But absent elimination of competition as a result of aggregation, assertions of the patents that were ultimately asserted against Apple and Intel had insufficient expected value to make the assertions worth the costs to those prior owners. That calculus changed once Fortress and the other Defendants aggregated those same patents and thereby eliminated the competitive constraints the prior owners faced. Defendants' decisions to assert previously-unasserted patents demonstrates a post-aggregation increase in price and/or licensing value attributable to aggregation and the resulting elimination of competition. In other words, the value to the prior owners of asserting the transferred patents was outweighed by the costs of doing so before aggregation because the value of the patents was constrained by competition in the markets for those patents and the owners

lacked market power. The prior owners thus did not assert them. Likewise, the prior owners could not have obtained the licensing amounts for the aggregated patents that Defendants have obtained or seek without the benefit of eliminating competition through aggregation. If the prior owners had been able to obtain such supracompetitive royalties, they would not have sold their patents to Defendants for amounts far below what Defendants have obtained or seek in royalties, and instead either would have sought to license the transferred patents themselves or sold them to Defendants at far higher prices. Indeed, except for limited exceptions described below, the aggregated patents had not previously been offered to Apple or Intel to license, and thus, on information and belief, nor to other similarly-situated potential licensees. The prior owners thus were seeking no royalties for the aggregated patents before their sale. Further, given the six-year limitation on damages under 35 U.S.C. § 286, when a patent that was more than six years old was aggregated, it meant that Defendants could not seek royalties for years predating the six-year period. Accordingly, there are pre-aggregation years in which the effective royalties for certain aggregated patents were zero.

13. The prior owners were willing to sell the patents to Defendants at prices that are far below the post-aggregation amounts Defendants have sought because they could not seek such amounts without the benefit of eliminating competition through aggregation. But, after aggregation and no longer facing the competitive restraint from competing substitute patents, Defendants have market power in the relevant patent markets described below and now the benefits to Defendants of asserting those same patents outweigh the costs of doing so. Accordingly, Defendants assert their aggregated patents and impose a cost on Apple, Intel, and others—either in the form of supracompetitive royalties or the cost of fending off excessive royalty demands through litigation. In this way, demands for supracompetitive royalties made in litigation impose a cost on Apple, Intel, and others even if they have not yet been paid—those demands require significant expenditures of fees to defend against or are the benchmark against which royalty amounts for licenses are negotiated.

14. By employing a network of PAEs that it either owns or controls, Fortress has created a web of entities that obscures Fortress's puppeteering role in this scheme. Rather than enhancing efficiency, Fortress uses aggregation to undermine it by eliminating competition and creating a structure in which Fortress and its PAEs benefit by making endless patent assertions. Those patent assertions often include assertions of weak patents—i.e., those that never would have been asserted by their former owners because they faced competition for licensing those patents before Fortress and Defendants eliminated that competition through aggregation. The amounts that Defendants seek for individual patents are so large—multiples of what they paid to obtain the asserted patents along with many others—that they demonstrate that those demands are attributable to aggregation rather than any efficiencies that Fortress and Defendants may purport to create. Prior owners (including many that have shown a willingness to litigate patents) would have asserted the transferred patents and sought to obtain the amounts that Defendants now seek if they could have, but they could not do so without the benefit of aggregation. Further, that the prior owners of the asserted patents—sophisticated entities experienced with patents—sold their patents for much lower prices than Defendants now seek demonstrates that those increased amounts Defendants seek are attributable to aggregation and the elimination of competition among competing substitute patents rather than the intrinsic value of the patents.

15. Fortress and its PAEs assert their patents in order to stretch the resources of their targets and increase the possibility that those weak patents will improperly be found valid and infringed or the prospect that a target (like Intel or Apple) will agree to a license to resolve the threat posed by Fortress and its PAEs. Thus, rather than promoting the procompetitive benefits of the patent system by increasing innovation and output, Fortress's scheme has the opposite effect. Fortress and its PAEs impose a tax on the electronics industry that increases prices, decreases output, dampens innovation, and ultimately harms consumers. To the extent that Fortress and the other Defendants have patents that would actually be of value to potential licensees, the transfer of those patents to Fortress's control limits access to them because those patents are now held by entities that, in light of the elimination of competition that constrained their prices, now have no

incentive to license patents in a way that captures royalties that are commensurate with their actual value. Instead, those entities have incentives to obtain excessive monopoly rents by exploiting patent portfolios that aggregate substitute patents with many meritless patents.

16. Through its anticompetitive aggregation scheme involving substitute patents whose owners formerly competed with one another to license product suppliers, Fortress has engaged in anticompetitive conduct by creating a portfolio of patents that purportedly read on electronic devices and components or software therein and processes used to manufacture them that allows it to charge far more than the competitive prices for licenses and the value of the inventive contributions (if any) of the patents. Fortress and its PAEs seek to use that ill-gotten power to extract and extort exorbitant revenues unfairly and anticompetitively from Intel, Apple, and other suppliers of electronic devices or components or software for such devices, and ultimately from consumers of those products. Fortress's aggregation scheme with Defendant PAEs is thus intended for an anticompetitive purpose—to invest in patents at costs lower than the holdup value of the patents to ensnare as many potential licensees as possible, eliminate competition that existed before the aggregation, and allow Fortress and the other Defendants to assert as many possible claims of infringement to tax the commercial use of existing technology at rates beyond the actual value (if any) of the aggregated patents.

17. In furtherance of the anticompetitive scheme, Fortress and the other Defendants have deployed patents in waves of lawsuits against their targets without regard for the merits of the claims. Fortress and its PAEs operate based on volume and repetition, targeting the resolve of the targets instead of establishing the merits and value of the patents. Given the size of the portfolio and the aggregation of substitute patents, Fortress and its PAEs can deploy patent after patent in case after case against their targets with the threat of ever more patent assertions and ever more litigation. Faced with this threat, many victims have agreed to settle, rather than to challenge Fortress and its PAEs, for amounts that reflect not the merits of the underlying patents but the effectiveness of the Fortress model in eliminating competition through aggregation. Other targets, such as Apple and Intel, are forced to expend enormous resources on litigation and face ongoing

and future serial patent assertions by Defendants as a result of the competition that has been eliminated through Defendants' patent aggregation scheme. Thus, Fortress and the other Defendants foreclose the possibility—which existed before aggregation—that licensing from alternative licensors or litigation can be an economic alternative to licensing patents from Defendants.

18. Intel and Apple bring this action to remedy the harms that they have already suffered from Defendants' violations of federal antitrust and state unfair competition laws and to prevent further harm to themselves, the broader electronics industry, and U.S. consumers.

PARTIES

19. Plaintiff Intel develops, manufactures, and sells integrated digital technology products. Intel is a corporation organized and existing under the laws of the State of Delaware, having its principal place of business within this District at 2200 Mission College Boulevard, Santa Clara, California.

20. Plaintiff Apple designs and sells innovative, iconic consumer electronics such as the iPhone, iPad, and MacBook. Apple is a corporation organized and existing under the laws of the State of California with its principal place of business within this District at One Apple Park Way, Cupertino, California.

21. Defendant Fortress claims to be a Delaware limited liability company. Fortress does business and maintains an office within this District at One Market Plaza, Spear Tower, 42nd Floor, San Francisco, California.

22. Defendant Fortress Credit Co. LLC ("Fortress Credit") claims to be a Delaware limited liability company with its principal place of business at 1345 Avenue of Americas, 46th Floor, New York, New York. Fortress Credit is registered with the California Secretary of State to do business in California and also maintains an office within this District at One Market Plaza, Spear Tower, 42nd Floor, San Francisco, California. Fortress Credit is an affiliate of Fortress.

23. Defendant Uniloc 2017 LLC ("Uniloc 2017") claims to be a Delaware limited liability company with addresses at 1209 Orange Street, Wilmington, Delaware; 620 Newport Center Drive, Newport Beach, California; and 102 N. College Avenue, Suite 303, Tyler, Texas.

24. Defendant Uniloc USA claims to be a Texas corporation with a principal place of business at Legacy Town Center I, Suite 380, 7160 Dallas Parkway, Plano, Texas. Uniloc USA is registered with the California Secretary of State to do business in California and also maintains an office in Newport Beach, California, where it conducts strategy meetings.

25. Defendant Uniloc Luxembourg, S.à.r.l. ("Uniloc Luxembourg") claims to be a Luxembourg company having a principal place of business at 15, Rue Edward Steichen, 4th Floor, L-2540, Luxembourg. Uniloc Luxembourg's CEO Craig Etchegoyen maintains a residence in Newport Beach, California, where he spends about 20 percent of his time and which he uses to conduct Uniloc Luxembourg business. Uniloc Luxembourg's chief financial officer, Drake Turner, resides and works in Southern California. Mr. Turner's responsibilities include preparing Uniloc Luxembourg's financial documents and negotiating terms with companies, including Fortress, that have security interests in Uniloc Luxembourg's patents. Uniloc Luxembourg conducts business at Uniloc USA's office in Newport, California.

26. Defendant VLSI Technology LLC ("VLSI") claims to be a Delaware limited liability company with a registered office at Corporation Trust Center, 1209 Orange Street, Wilmington, Delaware.

27. Defendant INVT SPE LLC ("INVT") claims to be a corporation existing under the laws of the State of Delaware with its principal place of business within this District at One Market Plaza, Spear Tower, 42nd Floor, San Francisco, California.

28. Defendant Inventergy Global, Inc. ("Inventergy") claims to be a Delaware corporation with its principal place of business within this District at 19925 Stevens Creek Boulevard, Cupertino, California.

29. Defendant IXI IP, LLC ("IXI IP") claims to be a New York limited liability company with its principal place of business at 825 Third Avenue, 2nd Floor, New York, New York.

JURISDICTION AND VENUE

30. This Court has jurisdiction over the federal claims alleged under 28 U.S.C. §§ 1331 and 1337(a). This Court has jurisdiction over the unfair competition claims arising under state law pursuant to 28 U.S.C. § 1367(a). The Court may grant declaratory relief in this action pursuant to at least 28 U.S.C. §§ 2201 and 2202 and 15 U.S.C. § 26.

31. Venue is proper in this District pursuant to, at least, 15 U.S.C. § 22 and/or 28 U.S.C. § 1391(b) and (c) because, during the relevant period, Defendants resided, transacted business, were found, or had agents in this District, and/or because a substantial portion of the affected interstate trade and commerce described herein has been carried out in this District. In particular, Intel and Apple have addressed Defendants' anticompetitive conduct described herein from their headquarters in this District, including addressing licensing demands and coordinating the defense of Defendants' litigation, much of which has occurred in this District. Further, Eran Zur, a Managing Director in Fortress's San Francisco office, runs Fortress's Intellectual Property Group, which has directed and controlled the anticompetitive conduct described herein.

32. This Court has personal jurisdiction over each Defendant based on its national contacts with the United States as a whole pursuant to 15 U.S.C. § 22, as well as Defendants' relevant contacts with this judicial district. Defendants have conducted and continue to conduct business in this District and/or have engaged in continuous and systematic activities in this District, including licensing activities, demands, negotiations, and litigation directly or through their agents. Defendants have minimum contacts with this forum such that the exercise of jurisdiction over them would not offend traditional notions of fair play and substantial justice.

I. FORTRESS'S ANTICOMPETITIVE PATENT AGGREGATION SCHEME, GENERALLY

33. Fortress describes its investing approach as "making control-oriented investments in cash flow generating assets."[13] Fortress has deployed two strategies in aggregating patents to obtain supracompetitive royalties. First, Fortress partners with PAEs and offers investments in the PAEs subject to the PAEs agreeing to join the Fortress-led scheme to make aggressive patent assertions in order to profit from the elimination of competition resulting from the patent aggregations. Second, in other instances, such as with VLSI, Fortress has skipped this intermediary step of finding a partner to do its bidding and acquired patents through a subsidiary outright from the start. The result is that Fortress has either acquired or controls a portfolio of well over a thousand U.S. patents for high-tech consumer and enterprise electronic devices and components or software therein and processes used to manufacture them to deploy against its targets. And by controlling patents across several PAEs (including those with which Fortress's relationship is not readily apparent), Fortress conceals the true scope of its patent portfolio.

34. Fortress has targeted suppliers of high-tech consumer and enterprise electronic devices or components or software for such devices because they provide attractive targets for repeated and meritless assertions through which Fortress and its PAEs seek to monetize the elimination of competition from their patent aggregation scheme. An article co-authored by Eran Zur, Managing Director of the Intellectual Property Finance Group at Fortress, observes that courts can grant "oversized awards" in the technology sector that "stem from the sheer complexity of interoperable components and systems sold as part of functional units, if not integrated devices."[14] Further, the article notes that "because technology invention tends to be incremental, to the extent an individual patent owner can be awarded damages on the price of the *entire end product* as opposed to their specific patent claim, a litigation incentive arises."[15] That litigation incentive is

[13] Fortress, https://www.fortress.com/businesses/private-equity (last visited Feb. 26, 2021).
[14] Eran Zur, *Why Investment-friendly Patents Spell Trouble for Trolls*, (Sept. 24, 2015), https://knowledge.wharton.upenn.edu/article/why-investment-friendly-patents-spell-trouble-for-trolls/ (last visited Nov. 15, 2019).
[15] *Id*. (emphasis added).

coupled with what the article notes are "the substantial legal costs to defend a patent infringement suit," creating a situation in which "speculative behavior drives an ever-inflating price ceiling (given the possibility of oversized damages) [and] a price floor becomes set by the extreme expense of litigation defense, marked at just under nuisance value."[16]

35. Further, aggregating a massive portfolio of electronics patents allows Fortress and its PAEs to amass a range of patents that are both substitutes for and complements to one another.[17] When a company wants to build an electronic device, such as a smartphone, there are many ways to do so. Each alternative requires multiple technologies. However, the alternatives do not require the same combination of technologies. For example, Alternative 1 might require technologies A, B and C, while Alternative 2 might require technologies D, E and F. The technologies used for Alternative 1 (A, B and C) are complements: they are each needed to create the device using Alternative 1. Similarly, the technologies used for Alternative 2 (D, E, and F) are complements. The technologies comprising Alternative 1 are also a substitute for the technologies comprising Alternative 2, because the bundle of technologies used in Alternative 1 can be used as a substitute for the bundle of technologies used in Alternative 2.

36. There are many possible permutations of complement and substitute technologies for electronics patents. For instance, Alternative 3 might require technologies A, C, and D. In that scenario, the technologies bundled in Alternative 3 are a substitute for the technologies bundled in Alternatives 1 and 2 respectively; A, C, and D are complements in the production of Alternative 3; and technology D is a substitute for technology B. Technologies can thus be both substitutes and complements. If Alternative 4 used technologies A, B, and D, then B and D are complements for Alternative 4, but D and B are also substitutes that if switched would change Alternative 1 to Alternative 3. Holding a broad array of patents that can act as both substitutes and complements

[16] *Id.*

[17] Substitute patents are not necessarily mutually exclusive alternatives to one another for all purposes. Substitute patents cover technologies that, possibly among other uses, provide alternative approaches to perform a common function.

in different circumstances allows Fortress and its PAEs flexibility to stifle competition in a variety of ways and against a variety of electronic device suppliers.

37. Some of the technologies that can be used to make an electronic device are patented. But even with the most diligent approach to assessing the patent landscape for a product, it is challenging to determine whether certain technologies included in the device are patented, including because the scope of patent claims and the patent claim's validity and enforceability may be uncertain before litigation.

38. When this array of patents is held by multiple owners that product suppliers can play off against one another in patent license negotiations, each patent owner would only assert a patent if the expected value of doing so was net positive. "Weak" patents that have questionable validity, infringement, enforceability, and/or are easily designed around, and therefore have little or no meaningful value, are either not asserted, or are asserted to demand a license at an amount that is commensurate with the value of the patent's inventive merits.

39. Faced with a patent asserted against its device, the supplier can typically either take a license to the patent or refuse to license and license from an owner of a substitute patent or litigate the infringement claim. Regardless of which course is taken, the feasibility of designing around the asserted patent will affect the outcome because the supplier will not pay the patent owner a royalty greater than the cost to design around the patent.

40. When patents are aggregated as Fortress has done, the dynamics for determining whether to assert a patent change and the options available to the target of the assertion also change—which have harmful impacts on competition.

41. First, the scope of Fortress's aggregation and its focus on electronics patents ensures that it can exercise market and hold-up power obtained or accentuated through its patent aggregation scheme that eliminated alternatives sources of substitute patents. Defendants have acquired substitute patents, many of which are itemized below, that, before aggregation, competed with each other. When the patents were held by their original owners, there was competition and a prospective licensee could choose between competing options (or forgo those options and design

its product in a different way), which had the effect of promoting competition and restraining royalties. But now, with the patents under the control of Fortress, the prospect of competition or redesigning products is improperly diminished or disappears. Fortress and its PAEs can thus threaten a target with the serial risk that the only or next best alternative design to an asserted patent is also subject to a patent claim by one of Fortress's PAEs.

42. Second, aggregation and the resulting elimination of competition elevate the value of asserting weak patents by Fortress-backed PAEs, untethered to the value of the patents themselves. Before aggregation, there would be no incentive to assert such patents because there would be no expectation of a positive return from asserting a weak patent because the patent could be expected to be proven invalid, not infringed, or unenforceable in litigation, or would be easily designed around, including because there were alternatives available in the market. But, after aggregation and the elimination of competitive alternatives, assertion of weak patents as part of a wave of assertions against a target generates economic value even if many of those assertions are defeated in litigation. By increasing the volume of assertions a target faces, Fortress and its PAEs cause targets to deploy licensing and litigation resources less efficiently and thereby increase the value of litigation to Fortress and its PAEs. In particular, Fortress and its PAEs increase the likelihood that a weak patent will slip through litigation and be found infringed, valid, and enforceable when it should not be. Further, this strategy creates incentives for targets to settle with Fortress-backed PAEs for amounts that exceed the value (if any) of their patents to put an end to this risk. In this manner, Fortress's patent aggregation enables the use of weak patents to force targets to pay undeserved and inflated royalties.

43. Patent aggregators often claim they are more efficient at enforcing patents than other licensors and that their greater efficiency results in higher payments to inventors and therefore in more innovation. But there is no efficiency associated with patent aggregation in the Fortress assertion model described herein. To the contrary, patent licensing becomes less efficient with this type of abusive patent aggregation because the targets waste resources to defend against meritless assertions.

44. Aggregating patents in the way that Fortress has done harms competition. First, by aggregating patents covering technologies that are alternatives for one another, Fortress injures competition in the same way as any merger or combination of competitors that lessens competition. Before aggregation, when multiple parties held such patents, those parties competed with one another to license the patents, and licensees benefited from that competition through more favorable licensing terms. Multiple holders of substitute patents were forced to compete with each other to offer better terms to secure licensees. Once Fortress and the other Defendants aggregated the patents, however, that competition was improperly reduced or eliminated, resulting in a diminished or eliminated set of alternative suppliers of substitute patents to maintain royalties and licensing output at competitive levels.

45. Second, Fortress introduces a new cost to suppliers of electronic devices and the components and software for those devices that dampens incentives for product suppliers to invest in research and development to drive innovation, thereby undermining innovation, reducing competition, and harming end consumers. End products are made more expensive and/or less innovative as a result of Defendants' conduct. Those competitors might have previously owned some of the patents aggregated by Fortress but were unable to impose such high costs on suppliers using technologies claimed by the patents when the patents were not aggregated into a massive portfolio encompassing substitute and complement patents. Fortress's aggregation thus undermines competition in the sales of electronic devices and components and software for those devices.

46. Third, the higher royalty payments that Fortress and its PAEs generate reward the creation of patents that are not actually inventive or are not actually used. Thus, the higher royalties that patent aggregation generates do not incent welfare-enhancing additional innovation. At the same time, the inflated royalties and litigation costs tax invention by product suppliers, thus reducing innovation in downstream product markets and harming end consumers.

47. Fourth, Fortress's hold-up power is amplified by the uncertainty it creates through the size of the portfolio it controls and obfuscation regarding the scope of that portfolio. After

aggregation, potential licensees lose the ability to decipher the extent to which Fortress controls patents that they may actually have wanted to license ex ante or that would be substitutes to asserted patents. By way of example, Fortress employees are listed as managing members or directors of companies that otherwise have no publicly known ties to Fortress. Mysterious patterns emerge such as entities with names connoting an unspecified relationship with Fortress, by a prefix "CF." District court judges have gone so far as having to compel Defendants to reveal the ownership history of the asserted patents and the degree to which Fortress held rights in, and control over, those patents. The effect is that the hold-up power of asserted patents is imbued on other patents Fortress controls. Thus, rather than fostering pro-competitive patent licensing, Fortress's aggregation scheme reduces potential licensees' ability to obtain licenses to any patents they might be interested in licensing while simultaneously elevating the value of weak patents.

48. Fortress's use of a web of separate PAEs to disperse and enforce the portfolio also ensures that no single entity can offer a comprehensive license to the Fortress portfolio and thereby increases the number of transactions necessary for licensees to attempt to secure patent peace or the number of litigations that Defendants can bring. For example, Defendant Uniloc 2017 was negotiating a license to resolve litigation against Netflix when, "[a]fter Netflix refused to execute any written agreement that did not also give it a license to patents owned by a third party that Netflix suspected controlled Uniloc (Fortress Investment Group)," Uniloc filed a motion to enforce a purported settlement that did not include Fortress based on the exchange of text messages between the parties' lawyers.[18] The court denied Uniloc 2017's motion, concluding it was "implausible that the July 19 exchange of text messages constituted an enforceable oral agreement to settle."[19] Further, as Netflix explained in its opposition to the motion, Uniloc 2017 sought to conceal the nature of its relationship with Fortress: "Netflix does not fully understand the Fortress-Uniloc relationship because Fortress and Uniloc have striven to conceal it. Throughout the case,

[18] *Uniloc 2017 LLC v. Netflix, Inc.*, No. 8:18-cv-02055-GW-DFM (C.D. Cal. Jan. 4, 2021), Dkt. 204 at 2.
[19] *Id*. at 5.

Uniloc refused to substantively address the Fortress relationship in interrogatory responses. Netflix subpoenaed Fortress, but Fortress, represented by the same law firm that represents Uniloc here, refused to produce any discovery whatsoever, forcing Netflix to move to compel in New York. During the settlement negotiations, Uniloc again refused to explain the relationship between Fortress and Uniloc."[20]

49. Defendants benefit from increasing the number of transactions because the more transactions, the more opportunities that they have to extract anticompetitive royalties that are not reflective of the value of the patents being licensed. The same goes for litigation—the more cases that Defendants bring, the more opportunities they create for mistaken findings of infringement or coercive settlements.

50. Distributing the patents across a network of PAEs, rather than having Fortress directly own and assert them, is also intended to limit the exposure of Fortress and the broader portfolio to potential blowback from aggressive assertions. For example, to the extent that one of Fortress's PAEs is subject to an award of significant sanctions or attorneys' fees, Fortress could decide either to cut its losses or that it is worth continuing to fund the PAE to pursue further assertions.

51. Moreover, PAEs can benefit in litigation from having had no role in prosecuting patents that they obtained from operating companies. The result is that it can be difficult for a defendant to obtain evidence and to mount a complete defense to a PAE's assertion—thereby increasing the likelihood of a mistaken verdict of infringement or failure to find unenforceability.

52. There is nothing inherently illegal with owning many patents or obtaining those patents through acquisition. But Fortress's patent aggregation scheme is unlike the development of patent portfolios by operating companies that use patents to safeguard their ability to offer their own products and services free from infringement by others. And it is different, too, from a company acquiring patents for the purpose of licensing based on the intrinsic value of those

[20] *Uniloc 2017 LLC v. Netflix, Inc.*, No. 8:18-cv-02055-GW-DFM (C.D. Cal. Dec. 14, 2020), Dkt. 188 at 9.

patents. Both of those scenarios have the potential to increase output and lower prices by putting patents to efficient use. But Fortress's aggregation is intended for an anticompetitive purpose—through patent acquisitions that eliminate competition, Fortress invests in patents at costs lower than the hold-up value of the patents to ensnare as many potential licensees and to allow it and the other Defendants to assert as many possible claims of infringement to tax the commercial use of existing technology at rates beyond the actual value (if any) of the aggregated patents. And Fortress's aggregation scheme has had its intended anticompetitive effects, capturing hold-up values that exceed the values at which Fortress or the other Defendants acquired the patents, leading to reduced output.

53. Nor are the transfers of patents at issue here typical sales that place patents in the hands of new owners that intend to practice them to develop their businesses or to license them based on their technical merit to generate revenue. Instead, Defendants' transfers are made with the purpose and effect of stifling competition by allowing Fortress and the other Defendants to extort supracompetitive royalties unrelated to the value (if any) of the Fortress-controlled patents.

54. Further, when Defendant PAEs entered into the agreements described below with Fortress and/or its affiliate Fortress Credit, they understood that the transaction would enable Fortress to aggregate substitute and complementary patents across a web of PAEs to eliminate competition existing when those patents were held by PAEs that were competing independently with one another and not under common Fortress control. The PAEs received compensation in the form of favorable terms, reflecting the fact that the PAEs were sharing in the supracompetitive royalties Defendants obtain by eliminating competition. Thus, each of the Defendants entered into separate agreements with Fortress with a common objective with Fortress to eliminate competition and reap the rewards from doing so. Fortress is thus at the center of a series of separate bilateral agreements between Fortress and each PAE to aggregate patents under Fortress's control to the benefit of Fortress and each of the PAEs with which it has contracted.

A. Fortress and the Uniloc Defendants

55. On December 30, 2014, Fortress Credit entered into a Revenue Sharing and Note and Warrant Purchase Agreement ("Uniloc-Fortress Revenue Sharing Agreement") with Uniloc Luxembourg and Uniloc USA, which was subsequently amended on February 24, 2015, May 27, 2016, and May 15, 2017. Under the Uniloc-Fortress Revenue Sharing Agreement, Fortress provided a loan to Uniloc USA in exchange for a share of future licensing revenue from its patent portfolio. The Uniloc-Fortress Revenue Sharing Agreement provided, as of the May 15, 2017 amendment, that Uniloc USA was subject to the following obligations and targets for monetization of the Uniloc patents:

> 6.2 Conduct of Monetization Activities; Minimum Monetization Revenues
>
> 6.2.1. The Issuer [Uniloc USA] shall undertake its best efforts to diligently pursue the monetization of the Patents and shall provide regular updates to the Purchasers and their advisors, and shall consult with Purchasers and their advisors on request, as to such activities.
>
> 6.2.2. From the Closing Date through December 31, 2016, the Company shall have received at least $20,000,000 in Actual Monetization Revenues. As of March 31, 2017 and the last day of each fiscal quarter thereafter, the Company shall have received at least $20,000,000 in Actual Monetization Revenues during the four fiscal quarter period ending on such date.

56. As the Third Amendment to the Uniloc-Fortress Revenue Sharing Agreement explained, the original agreement called for lower monetization amounts that were increased through subsequent Amendments:

> WHEREAS, on December 30, 2014, the Issuer [Uniloc USA] issued to the Term A/B Purchaser [CF DB EZ LLC, a Fortress affiliate] $10,000,000 in original principal amount of Notes along with the Revenue Stream, and on May 27, 2016, the Issuer issued to the Term A/B Purchaser an additional $6,000,000 in original principal amount of Notes, which issuance resulted in an increase in the amounts payable to the Term A/B Purchaser with respect to the Revenue Stream[.]

57. If Uniloc USA failed to timely make a required payment to Fortress or any other "Event of Default" occurred, Fortress had the right to accelerate the full payments owed by Uniloc USA.

58. Fortress also entered into a Patent License Agreement with Uniloc Luxembourg and Uniloc USA on December 30, 2014. The License granted Fortress "a non-exclusive, transferrable, sub-licensable, divisible, irrevocable, fully paid-up, royalty-free, and worldwide license to the Licensed Patents, including, but not limited to, the rights to make, have made, market, use, sell, offer for sale, import, export and distribute the inventions disclosed in the Licensed Patents and otherwise exploit the Licensed Patents in any lawful manner in ***Licensee's sole and absolute discretion*** solely for the benefit of the Secured Parties ('Patent License'), provided that Licensee shall only use the Patent License following an Event of Default."[21]

59. Fortress later took steps to control even more directly the assertion of the Uniloc Luxembourg and Uniloc USA patents. On February 23, 2017, Fortress formed Uniloc 2017 and Uniloc 2017's parent corporation, CF Uniloc Holdings LLC, in order for Fortress to direct and control the assertion of Uniloc patents. James K. Noble, who was previously Fortress's Secretary, signed the certificates of formation for both Uniloc 2017 and CF Uniloc Holdings LLC.

60. On May 3, 2018, Uniloc Luxembourg assigned nearly 600 patents to Uniloc 2017 pursuant to a March 28, 2018 Asset Purchase Agreement. Constantine Dakolias signed the agreement as President of Uniloc 2017. Mr. Dakolias is also Co-Chief Investment Officer, Credit Funds at Fortress.

61. As one court observed about the various transfers of patents and agreements between the Uniloc entities: "The Court suspects that Uniloc's manipulations in allocating rights to the patents-in-suit to various Uniloc (possibly) shell entities is perhaps designed to insulate

[21] *Uniloc USA, Inc. et al. v. Apple Inc.*, No. 3:18-CV-00360 (N.D. Cal. Feb. 15, 2019) (WHA), Dkt. 167-4 (emphasis added).

Uniloc Luxembourg from any award of sanctions in the event Uniloc loses this litigation (or some substantial part thereof)."[22]

62. In entering the Uniloc-Fortress Revenue Sharing Agreement and Patent License Agreement in 2014, Fortress, Uniloc USA, and Uniloc Luxembourg understood that the agreements would enable aggregation of substitute and complementary patents under Fortress's control, and Uniloc USA and Uniloc Luxembourg understood they benefitted by contributing to Fortress's scheme, including by sharing in supracompetitive royalties that would be extracted by virtue of eliminating competition when the Uniloc patents were aggregated with substitute patents held by other PAEs under Fortress's control. As Fortress, Uniloc USA, and Uniloc Luxembourg understood, the 2018 Asset Purchase Agreement, by which patents were ultimately transferred to Uniloc 2017, further facilitated these objectives. As a result, at least the substitute and complementary patents described in detail below have been aggregated under Fortress's control.

63. Indeed, the Uniloc Defendants and Fortress understood that the Uniloc Defendants' monetization scheme would not be profitable absent the enhanced market power obtained by aggregating Uniloc patents with others controlled by Fortress.

64. A Management Report of the Board of Directors for the fiscal year that ended June 30, 2017, which Uniloc produced to Apple in German litigation on a voluntary and non-confidential basis, explained that "[a] material uncertainty exists that may cast significant doubt on the Company's ability to continue as a going concern as at [*sic*] 30 June 2017. The Company has resolved this going concern issue by entering into the Fortress transaction, as described below." In particular, given the "overall chill in the environment for companies operating in the patent enforcement space," the Management Report observed that "opportunities may exist for consolidation among companies with complementary operations or competitive advantages." As further described in the Management Report, under the March 28, 2018 Asset Purchase Agreement, "substantially all of the Company's assets and liabilities are agreed to be sold to Uniloc

[22] *Uniloc 2017 LLC v. Google LLC*, No. 2:18-cv-00553 (E.D. Tex. July 1, 2019), subsequently transferred as No. 5:20-cv-05346 (N.D. Cal.) (SVK), Dkt. 28 Exhibit V.

2017, a new Delaware LLC owned and controlled by Fortress." The Management Report further indicated that the "consideration to be paid is USD 17,600,000 plus the amount necessary to retire all the Fortress notes." In addition to the purchase price, Uniloc Luxembourg received an entitlement "to receive additional payments of up to USD 25,000,000 upon the accomplishment of certain revenue milestones by Uniloc 2017 over the subsequent five years." Uniloc Luxembourg thus intended to profit from Fortress's use of Uniloc 2017 in its aggregation scheme to generate supracompetitive royalties.

65. An independent auditor's report prepared by Ernst & Young ("Auditor's Report") for Uniloc's balance sheet as of June 30, 2017 accompanied the Management Report. It indicated that, as of that time, Uniloc Luxembourg had borrowed $16 million from Fortress. Accordingly, the total purchase price to Fortress under the Asset Purchase Agreement was $33.6 million.

66. Further, the Auditor's Report identifies "Concessions, patents, licences, trade marks and similar rights and assets" as having a value of $6,253,241, and that amount is further allocated between $6,058,225 for those assets "acquired for valuable consideration" and $195,016 for assets "created by the undertaking itself." A note to the Auditor's Report explains that "[i]ntangible assets are valued at purchase price including the expenses incidental thereto or at production cost, less accumulated depreciation, amounts written off and value adjustments." For patents specifically, the note explains that "[c]osts associated with the acquisition and registration of patents have been capitalized and are amortized on a straight-line basis over the remaining useful lives of the patents."

67. As Uniloc's counsel explained in a hearing in U.S. litigation: "Apple keeps pointing to this $6 million valuation. That was the valuation of the company which I believe was based upon largely the amount that they paid for the patents." He further explained, "[i]t is the accountant value of all of the intangible assets, the patents, the trademarks, the good will, that sort of thing."[23]

[23] *Uniloc USA, Inc. v. Apple Inc.*, No. CV-19-1692-EJD (N.D. Cal. Sept. 29, 2020), Dkt., 177-1, Transcript at 10:15-17, 12:5-7.

68. While Uniloc fell short of achieving the revenue milestones to which it agreed with Fortress, it was still, according to the Auditor's Report, able to generate $14.6 million in the fiscal year that ended June 30, 2017, and $7.3 million in the prior year. As the Management Report explained, Uniloc Luxembourg's revenue was "achieved mainly through enforcement activities in the form of litigation." The benefits of aggregating the Uniloc patents with others controlled by Fortress thus enabled Uniloc to obtain supracompetitive royalties—royalties in one year that were twice the amount that Uniloc Luxembourg paid for the patents.

69. The shortfall in revenue has caused Uniloc USA and Uniloc Luxembourg to face standing challenges in litigating patents assigned to Uniloc 2017. On December 4, 2020, Judge Alsup concluded in one case that "plaintiffs' patent licensing scheme divested them of exclusionary rights, and, thus, of Article III standing."[24] In particular, Judge Alsup concluded that "[w]hen the Unilocs sued on May 26, 2017, the uncured Event of Default satisfied the only precondition to Fortress's *use* of its 'transferrable, sub-licensable, divisible, irrevocable' license to make use, sell, or 'otherwise exploit' the '203 patent 'in any lawful manner' in Fortress's 'sole and absolute discretion.'"[25] Notably, "Fortress did not believe the Unilocs to be in default. And, discovery now reveals, *the Unilocs took no action to remedy any default and no one even discussed what next steps the parties might take to cure a default*."[26] A Fortress representative, James Palmer, managing director of the IP Finance Group at Fortress Investment Group, testified, "I never believed them to be in default. But if for some crazy reason somebody thinks they were in default, by simple fact of us actually executing an additional amendment and giving them additional capital means in my mind that it's satisfied."[27]

70. Fortress's willingness to overlook and abrogate its rights under its agreements with Uniloc USA and Uniloc Luxembourg further demonstrates that Fortress and Uniloc USA and

[24] Order Dismissing Case for Lack of Standing at 1, *Uniloc USA, Inc., et al., v. Apple Inc.*, No. C 18-00358 WHA (N.D. Cal. Dec. 4, 2020), Dkt. 186.
[25] *Id*. at 9.
[26] *Id*. at 7 (emphasis in original).
[27] *Uniloc USA, Inc. et al. v. Apple Inc.*, 3:18-cv-00358-WHA (N.D. Cal. Nov. 5, 2020), Dkt. 174-2.

Uniloc Luxembourg have not simply engaged in an arms' length transaction, but instead have found common cause in exploiting the benefits of aggregation—a path that Fortress deemed more beneficial than obtaining its full rights under the agreements with Uniloc Luxembourg and Uniloc USA. Uniloc USA and Uniloc Luxembourg contend that they have standing and have appealed Judge Alsup's and other similar rulings to the Federal Circuit.

71. Fortress subsequently paid $33.6 million to acquire Uniloc Luxembourg's assets (including its patents), which had been valued at only $6.25 million, because it recognized that those patents would continue to provide multiples of value when Fortress solidified its control over them along with other substitute patents already under Fortress's control, thus eliminating competition that had constrained Uniloc Luxembourg from asserting the patents and enabling Fortress and Uniloc Luxembourg to extract supracompetitive royalties. Similarly, Uniloc Luxembourg must have known that by receiving the inflated purchase price—$33.6 million plus the opportunity to earn another $25 million based on future monetization for a portfolio valued at $6.25 million—it was sharing in the supracompetitive royalties that the parties expected to continue to result from the patent aggregation. Indeed, these returns stand in stark contrast to Uniloc Luxembourg's recognition in the Management Report of the "overall chill in the environment for companies operating in the patent enforcement space . . . due to a variety of factors" and the "unusually challenging environment for traditional investors."

72. As described below, following the June 2017 valuation of $6.25 million and the March 28, 2018 acquisition by Fortress for $33.6 million, the Uniloc defendants on behalf of Fortress have sought far more in royalties than the value of the Uniloc patents as reflected in the valuation by Ernst and Young based on their acquisition prices and/or the transaction between Uniloc and Fortress.

73. The Management Report provides insight into Uniloc and Fortress's strategy to extract supracompetitive royalties, including reliance on a proprietary software platform, Centurion, to aid in accomplishing profitable acquisitions by identifying candidate patents. The Auditor's Report describes Centurion as a "comprehensive proprietary platform, supplemented

with advanced algorithms, state-of-the-art web crawler capabilities and search tools, and further developed a robust reporting capability." Uniloc Luxembourg's CEO Craig Etchegoyen has described using Centurion to acquire patents at low cost and "then to augment their value through internal development of additional complementary patents." Centurion has thus aided Uniloc in pursuing a strategy of creating a portfolio of patents comprised of substitutes and complements, which, as further described below, has helped Fortress to create market power in certain relevant patent markets.

B. Fortress and VLSI

74. Fortress strategized for six months before undertaking the creation of VLSI and causing the transfer of patents to VLSI.[28] Among the options Fortress considered was a "Privateering Option" in which the patents would be transferred to a new entity from their prior owner to carry out enforcement. Another option was the "Corporate Carve Out" in which Fortress would purchase a division of the former owner along with some of its patents. Ultimately, Fortress settled on the Privateering Option, to be accomplished through the creation of VLSI to obtain patents from the former owner and then assert them in litigation.

75. Fortress formed VLSI on June 27, 2016. VLSI's formation document is signed by Marc K. Furstein, Fortress's Managing Director, President of the Credit Funds & Chief Operating Officer of Credit Funds. Two days after VLSI's formation, Justin Klein (then Chief Financial Officer of Fortress's credit arm) formed CF VLSI Holdings LLC ("VLSI Holdings"). VLSI is a subsidiary of VLSI Holdings. That VLSI ultimately operates at the behest of Fortress is further evidenced by the signature of Eran Zur, Managing Director of Fortress's Intellectual Property Group and an "authorized signatory" for VLSI, on several documents assigning patents to VLSI.

76. [redacted] Intel and Apple were permitted over VLSI's objection to use a redacted copy of the agreement and an

[28] *VLSI Technology LLC v. Intel Corporation et al*, No. 5:18-mc-80193 (N.D. Cal. Jan. 1, 2019) (NC), Dkt 31.

amendment thereto under seal for this litigation.[29] [redacted]

[redacted]

77. [redacted]

[redacted]

[29] *VLSI Tech. LLC v. Intel Corp.*, No. 18-cv-966-CFC (D. Del. Feb. 3, 2021), Dkt. 693.

78. VLSI holds nearly 200 U.S. patents and began receiving them pursuant to an August 16, 2016 assignment. Mr. Zur signed a certain number of the patent assignment agreements on behalf of VLSI. VLSI acquired additional patents from the same prior owner in later tranches, including in April 2017, December 2017, December 2018, and February 2019. In nearly every tranche, VLSI acquired patents that are closely related to patents it had acquired in prior tranches, and that are substitutes and/or complements of patents held by other Defendants, which are also under Fortress's control, as described in detail below.

79. Neither VLSI nor VLSI Holdings manufactures or sells any products. At least as of June 2019, VLSI had a single employee—its Chief Executive Officer, Michael Stolarski. Mr. Stolarski is an attorney who worked at several law firms before becoming the CEO of VLSI. As of October 2, 2020, Mr. Stolarski, Mr. Zur, and Fortress Managing Director Ami Patel Shah were the only members of VLSI's board of directors.

C. Fortress, Inventergy, and INVT

80. In May 2013, Inventergy acquired over 180 patents from Huawei Technologies Co. ("Huawei") claimed to relate to IP Multimedia Subsystem (IMS) and Voice over IP (VoIP). Inventergy acquired the Huawei patents subject to certain ongoing payment obligations to Huawei, including to make a one-time payment when a certain revenue threshold was obtained by licensing the patents and also to share a certain percentage of the quarterly net revenue earned by licensing the patents.

81. In October 2013, Inventergy acquired nearly 500 patents from Panasonic Corporation ("Panasonic") claimed to relate to 3G and 4G mobile telecommunications. Inventergy acquired the Panasonic patents subject to an obligation to share a certain percentage of the quarterly net revenue earned on the patents with Panasonic, including to make certain guaranteed payments. Inventergy agreed that if it failed to make the guaranteed payments by a specified date, Panasonic could charge it late fees and Panasonic may have the right to collect interest and in certain circumstances to terminate the agreement under which the patents were transferred to Inventergy.

82. In May 2014, Inventergy acquired approximately 80 patents claimed to be related to IMS and VoIP from Nokia Corporation ("Nokia"). As consideration, Inventergy agreed to make cash payments to Nokia on or before October 1, 2014, June 1, 2015, and June 1, 2016.

83. On October 1, 2014, affiliates of Fortress—DBD Credit Funding, LLC and CF DB EZ LLC—entered a Revenue Sharing and Note Purchase Agreement with Inventergy and its wholly-owned subsidiary, Inventergy, Inc. Through the arrangement, Fortress provided $11 million in financing to Inventergy, consisting of $10 million in debt financing and $1 million in sale of stock. As Inventergy informed its shareholders, the Fortress funds were "applied towards the repayment of existing debt obligations and improvement of our capital structure."

84. In exchange for Fortress's investment, Inventergy agreed to apply revenues generated from patent monetization to repayment of the investment and, further, to provide Fortress with an additional portion of Inventergy's licensing revenues. If Inventergy failed to make the required payments, it could default under the agreement. As Inventergy subsequently warned its shareholders: "In the case of a default, Fortress could accelerate our obligations under the Fortress Agreement and exercise their right to foreclose on their security interests, which could force us to cease operations."

85. Fortress's backing emboldened Inventergy to aggressively pursue licensing targets, including through its wholly-owned subsidiary Inventergy, Inc. As Sonus Networks alleged in a case against Inventergy, Inventergy's CEO Joe Byers told Sonus in January 2015 that "Fortress[,] does not settle" in litigation and that if Sonus Networks declined to take a license, it would face "an IP bloodbath." This threat demonstrates that Inventergy understood that it was one of a number of PAEs acting at Fortress's direction and as part of Fortress's anticompetitive aggregation strategy to obtain supracompetitive royalties by aggregating patents and eliminating competition that existed pre-aggregation.

86. An Inventergy investor presentation of May 11, 2015—post-dating the acquisitions of portfolios from Huawei, Panasonic, and Nokia—indicated that Inventergy held more than 760 patents and had a market capitalization (i.e., the value of Inventergy on the open market) of $15

million. Further, the presentation claimed that "80% of the Value of Most Companies is their Intellectual Property," a claim that would apply particularly to a company like Inventergy, which was solely in the business of licensing its intellectual property and that boasted having a "World Class Team" to license its patents. The presentation further detailed that Inventergy had "Paid a total of $10M for the patent acquisitions to date, 2013, 2014" and that Inventergy would "Also owe % of Net Revenue (Gross Revenues less litigation costs, if any), with certain minimum payments of $20M over next 3 years."

87. On September 29, 2016, Inventergy announced that Fortress and Inventergy had signed a letter of intent "under which Fortress will provide financial and other resources to monetize the roughly 760 telecommunication patent assets Inventergy previously acquired from Panasonic, Nokia and Huawei. In short, Fortress has switched from being simply a finance partner of Inventergy to a comprehensive business partner."

88. On December 22, 2016, Inventergy entered a Restructuring Agreement to amend the Revenue Sharing and Note Purchase Agreement. As Inventergy explained the consequences of the Restructuring Agreement, Inventergy would contribute patents, and "Fortress will have the sole discretion to make any and all decisions relating to [Inventergy's] patents and patent monetization activities (excluding future acquired patents related to Inventergy Innovations, LLC, a subsidiary of Parent, and related monetization activities) (such patents that are subject to the Restructuring Agreement, the 'Patents'), including the right to license, sell or sue unauthorized users of the Patents."[30] By vesting Fortress with full control of Inventergy's patent monetization and receiving handsome consideration for doing so, Inventergy would have understood and intended that its patents would be deployed as part of Fortress's aggregation strategy to obtain supracompetitive royalties.

[30] Inventergy Global, Inc., Form 8-K at Item 1.01 (Dec. 29, 2016), available at https://www.sec.gov/Archives/edgar/data/1084752/000114420416141761/v455943_8k.htm (last accessed Aug. 4, 2020).

89. Further, the Restructuring Agreement modified the revenue sharing arrangement to provide that after making certain required payments, including to Nokia, Huawei, and Panasonic, Fortress would receive proceeds "until Fortress has received (x) reimbursement of any amounts advanced by Fortress pursuant to the Restructuring Agreement plus 20% annual interest on such advances plus (y) $30.5 million less any amounts paid to Fortress for the Note Obligations under the Revenue Sharing and Note Purchase Agreement after December 22, 2016" and "after all of the foregoing payment obligations are satisfied, 70% to Fortress and 30% to the Company." Inventergy announced the Restructuring Agreement as an arrangement "under which Fortress may fund, at its discretion, an enhanced enforcement program to further monetize Inventergy's 740 telecommunications patent assets that the Company previously acquired from Panasonic, Nokia and Huawei."[31]

90. As a result of the Restructuring Agreement, Inventergy and a Fortress affiliate, CF INVT Holdings LLC, on April 27, 2017 formed INVT. At least portions of Inventergy's patent portfolio were assigned to INVT the same day. Mr. Dakolias, Co-Chief Investment Officer, Credit Funds at Fortress, is the President of CF INVT Holdings LLC, and signed INVT's Limited Liability Company agreement on behalf of INVT and CF INVT Holdings LLC. Michele Moreland, a Director at Fortress, serves as the Licensing Officer of Defendant INVT SPE.

91. Before it entered the October 2014 Revenue Sharing and Note Purchase Agreement with Fortress affiliates, Inventergy had already aggregated substitute and complementary patents in the telecommunications space. In entering the October 2014 agreement, as well as the December 2016 Restructuring Agreement, Fortress and Inventergy understood that the agreements would aggregate those substitute and complementary patents with other substitute and complementary patents under Fortress's control, and Inventergy understood that it benefitted by contributing to Fortress's scheme, including by sharing in supracompetitive royalties that would be extracted by virtue of eliminating competition. The April 2017 transfer of Inventergy's patents

[31] *Id.*

to INVT facilitated these objectives. As a result, at least the substitute and complementary patents described in detail below have been aggregated under Fortress's control.

D. Fortress and IXI IP

92. On April 2, 2014, IXI IP was formed in New York. IXI IP is a patent assertion entity that received patents from IXI Mobile (R&D) Ltd. ("IXI R&D") on June 5, 2014, less than two weeks before filing its first suit against Apple. The same day IXI IP received the transfer, it licensed the patents back to IXI R&D.

93. Also on June 5, 2014, IXI IP assigned a security interest in each of the patents it received from IXI R&D to Fortress Credit. In entering the agreement that gave rise to assignment of a security interest in IXI IP's patents to Fortress Credit, Fortress (and Fortress Credit) and IXI IP understood that the agreement would result in aggregation of substitute and complementary patents under Fortress's control (as further detailed below), and IXI IP understood it benefited by contributing to Fortress's scheme, including by sharing in supracompetitive royalties that would be extracted by virtue of eliminating competition.

94. Three months later, on September 11, 2014, Fortress Credit Co. DBD LLC assigned its interest to FCO V CLO Transferor LLC, another Fortress subsidiary.

E. Fortress and Seven Networks

95. Seven Networks, LLC ("Seven Networks") was originally incorporated in Delaware in 2000 as a mobile messaging company under the name Seven Networks Inc. Seven Networks Inc. subsequently registered to conduct business in Texas in 2005.

96. Fortress was formerly an investor in Seven Networks Inc. Fortress gained control of Seven Networks in 2015, after Seven Networks unsuccessfully attempted to monetize its patent portfolio by offering its patents as well as its entire company for evaluation and sale to a number of entities, including Apple. In July 2015, Fortress converted Seven Networks Inc. to a limited liability company. Seven Network Inc.'s patents passed to Seven Networks at the time of the July 2015 corporate conversion, thereby formally bringing additional substitute and complementary patents under Fortress's control, as described below.

97. Seven Network's parent is CF SVN LLC, a Delaware company formed on July 2, 2015, and a Fortress subsidiary.

F. Fortress and KIP CR P1

98. Crossroads Systems, Inc. ("Crossroads") is a publicly-traded company that used to be in the business of licensing intellectual property.

99. In July 2013, Crossroads received a loan of up to $10 million from Fortress Credit that was later assigned to another Fortress affiliate, CF DB EZ LLC. As part of the loan agreement, Crossroads assigned 109 granted or pending patents to a partnership, KIP CR P1 LP ("KIP CR P1"), formed by Crossroads and Fortress. The transferred patents were all of Crossroads' patents with the exception of one patent family (for U.S. Patent No. 5,941,972 ("'972 patent")). As with Fortress's other loan deals, Crossroads risked losing its interests in the transferred patents in an "Event of Default," including missing a payment to Fortress.

100. Crossroads was ultimately able to repay the loan to Fortress in October 2015 only when it made a deal to share revenue from the monetization of the '972 patent family with another company. But this arrangement was not enough for Crossroads to stay solvent. In August 2017, Crossroads announced that it had filed for Chapter 11 bankruptcy in order to restructure its business and attract new investment.

101. In the end, Fortress wound up acquiring all of Crossroads' patents. As part of its restructuring, Crossroads announced in November 2017 that it had sold its patent portfolio as well as related partnership interests to an "affiliate of Fortress Investment Group" to take over patent monetization efforts.[32] That Fortress affiliate was KIP CR P1. Fortress and Crossroads agreed to "share the proceeds from such efforts equally (after deducting expenses and a $1.5 Million monetization hurdle)."[33]

[32] Crossroads Systems press release, *Crossroads Systems Sells Patent Portfolio to Affiliate of Fortress Investment Group*, Nov. 7, 2017.
[33] *Id.*

II. LICENSING AND LITIGATION CAMPAIGNS

102. Consistent with Fortress's intent, the PAEs it has created or in which it has invested have engaged in prolific patent assertions and litigation campaigns. The practice of serial litigations that Fortress's PAEs have pursued demonstrate that they have used litigation to impose a crushing burden on their targets, which has been made possible by aggregating substitute patents, rather than obtaining royalties based on their patents' inventive value. And as discussed below is Section III, it is already apparent that several of these cases involve assertions of substitute patents that have been aggregated under Fortress's control.

A. The Uniloc Defendants

103. To date, the Uniloc Defendants have targeted Apple in 25 patent cases in the United States:

- *Uniloc USA, Inc. et al v. Apple Inc.*, No. 2:16-cv-00638 (E.D. Tex.)
- *Uniloc USA, Inc. et al. v. Apple Inc.*, No. 2:17-cv-00258 (E.D. Tex.), subsequently transferred as 3:18-cv-00357 (N.D. Cal.) (LHK)
- *Uniloc USA, Inc. et al. v. Apple Inc.*, No. 2:17-cv-00454 (E.D. Tex.), subsequently transferred as 5:18-cv-00358 (N.D. Cal.) (WHA) and 18-2094 (Fed. Cir.)
- *Uniloc USA, Inc. et al. v. Apple Inc.*, No. 2:17-cv-00455 (E.D. Tex.), subsequently transferred as 3:18-cv-00359 (N.D. Cal.) (WHA)
- *Uniloc USA, Inc. et al. v. Apple Inc.*, No. 2:17-cv-00457 (E.D. Tex.), subsequently transferred as 3:18-cv-00360 (N.D. Cal.) (WHA)
- *Uniloc USA, Inc. et al v. Apple Inc.*, No. 2:17-cv-00469 (E.D. Tex.), subsequently transferred as 4:18-cv-00361 (N.D. Cal.) (PJH)
- *Uniloc USA, Inc. et al v. Apple Inc.*, No. 2:17-cv-00470 (E.D. Tex.), subsequently transferred as 4:18-cv-00362 (N.D. Cal.) (PJH)
- *Uniloc USA, Inc. et al v. Apple Inc.*, No. 2:17-cv-00522 (E.D. Tex.), subsequently transferred as 4:18-cv-00364 (N.D. Cal.) (PJH)
- *Uniloc USA, Inc. et al v. Apple Inc.*, No. 2:17-cv-00534 (E.D. Tex.), subsequently transferred as 3:18-cv-00363 (N.D. Cal.) (WHA)
- *Uniloc USA, Inc. et al v. Apple Inc.*, No. 2:17-cv-00535 (E.D. Tex.), subsequently transferred as 3:18-cv-00572 (N.D. Cal.) (WHA)

- *Uniloc USA, Inc. et al v. Apple Inc.*, No. 2:17-cv-00571 (E.D. Tex.), subsequently transferred as 3:18-cv-00365 (N.D. Cal.) (WHA)
- *Uniloc USA, Inc. et al v. Apple Inc.*, No. 2:17-cv-00708 (E.D. Tex.)
- *Uniloc USA, Inc. et al v. Apple Inc.*, No. 1:18-cv-00158 (W.D. Tex.), subsequently transferred as 4:19-cv-01691 (N.D. Cal.) (JST)
- *Uniloc USA, Inc. et al v. Apple Inc.*, No. 1:18-cv-00159 (W.D. Tex.), subsequently transferred as 5:19-cv-01692 (N.D. Cal.) (EJD)
- *Uniloc USA, Inc. et al v. Apple Inc.*, No. 1:18-cv-00161 (W.D. Tex.), subsequently transferred as 4:19-cv-01693 (N.D. Cal.) (JST)
- *Uniloc USA, Inc. et al v. Apple Inc.*, No. 1:18-cv-00163 (W.D. Tex.), subsequently transferred as 4:19-cv-01694 (N.D. Cal.) (JST)
- *Uniloc USA, Inc. et al v. Apple Inc.*, No. 1:18-cv-00164 (W.D. Tex.), subsequently transferred as 5:19-cv-01695 (N.D. Cal.) (LHK)
- *Uniloc USA, Inc. et al v. Apple Inc.*, No. 1:18-cv-00166 (W.D. Tex.), subsequently transferred as 4:19-cv-01696 (N.D. Cal.) (YGR)
- *Uniloc USA, Inc. et al v. Apple Inc.*, No. 1:18-cv-00293 (W.D. Tex.), subsequently transferred as 3:19-cv-01697 (N.D. Cal.) (VC)
- *Uniloc USA, Inc. et al v. Apple Inc.*, No. 1:18-cv-00296 (W.D. Tex.), subsequently dismissed without prejudice
- *Uniloc 2017 LLC et al v. Apple Inc.*, No. 1:18-cv-00838 (W.D. Tex.), subsequently refiled as 1:18-cv-00990, and subsequently transferred as 3:19-cv-01904 (N.D. Cal.) (WHO)
- *Uniloc 2017 LLC et al v. Apple Inc.*, No. 1:18-cv-00851 (W.D. Tex.), subsequently refiled as -18-cv-00989 (W.D. Tex.), and subsequently transferred as 3:19-cv-01905 (N.D. Cal.) (JD)
- *Uniloc 2017 LLC et al v. Apple Inc.*, No. 1:18-cv-00890 (W.D. Tex.), subsequently refiled as 1-18-cv-00992 (W.D. Tex.), and subsequently transferred as 4:19-cv-01949 (N.D. Cal.) (JSW)
- *Uniloc 2017 LLC et al v. Apple Inc.*, No. 1:18-cv-00907 (W.D. Tex.), subsequently refiled as 1-18-cv-00991 (W.D. Tex.), and subsequently transferred as 5:19-cv-01929 (N.D. Cal.) (EJD)
- *Uniloc 2017 LLC v. Apple Inc.*, No. 6:19-cv-00532 (W.D. Tex.), subsequently transferred as 5:21-cv-00995 (N.D. Cal.) (VC)

104. The Uniloc Defendants have often filed these cases against Apple in waves, with the apparent aim of heightening the threat to Apple to increase leverage and extract a settlement. For example, in June 2016, Uniloc USA and Uniloc Luxembourg sued Apple on four patents;

between April and October 2017, Uniloc USA and Uniloc Luxembourg sued Apple on another 16 patents; in February 2018, Uniloc USA and Uniloc Luxembourg sued Apple on another seven patents; in April 2018, Uniloc USA and Uniloc Luxembourg sued Apple on another two patents; and in October 2018, Uniloc 2017 and Uniloc Licensing USA LLC ("Uniloc Licensing USA") sued Apple on another four patents.

105. Although Apple has been a favored target of the Uniloc Defendants, it has not been the only one. Since its creation in February 2017, Uniloc 2017 has been a plaintiff in more than 130 patent infringement suits. Its targets have included the following companies that supply high-tech consumer and enterprise electronic devices or components or software for such devices:

- Barnes & Noble, Inc.
- BlackBerry Corporation
- Cardo Systems, Inc.
- Cisco Systems, Inc.
- Google LLC ("Google")
- Hike Ltd.
- Huawei Devices USA
- LG Electronics USA, Inc.
- Samsung Electronics America, Inc.
- Terrano, LLC
- ZTE (USA), Inc.
- Netflix, Inc.
- Hulu

106. By targeting a broad number of suppliers of a particular electronics product—e.g., smartphones—the Uniloc Defendants (as well as the other Defendants) increase the chances that the costs imposed on those suppliers will be internalized and passed along to consumers.

107. As with Apple, the Uniloc Defendants have targeted many of these companies in repeated lawsuits. Google, for example, has been a frequent target. On October 1, 2018, Uniloc 2017 and Uniloc Licensing USA filed four separate complaints against Google. Between October 31, 2018 and November 1, 2018, Uniloc 2017, Uniloc Licensing, and Uniloc USA filed another 10 separate complaints against Google. Later in November, the Uniloc entities dismissed those 14 complaints without prejudice and a different set of Uniloc entities—Uniloc 2017 and Uniloc USA—filed 14 new complaints against Google on the same 14 patents asserted in the prior complaints. In December 2018, Uniloc 2017 filed an additional seven complaints against Google, one of which it later dismissed. That amounts to a total of 35 lawsuits against Google by Uniloc entities over three months.

108. The four years so far of the Uniloc Defendants suing Apple has demonstrated Fortress's scheme to assert endless, meritless litigation, which has been made feasible by the elimination of competition resulting from its patent aggregations. The four patents in the first Uniloc case against Apple have all been found unpatentable by the USPTO. The second Uniloc case against Apple revealed how little pre-suit diligence is taken before suing, when after suing, Uniloc Luxembourg voluntarily dismissed one of the three asserted patents and admitted that the "Patent is probably commercially worthless."[34] It is no surprise that one judge described Uniloc USA's infringement theories in a case as "bogus and conclusory."[35] The examples below demonstrate the flaws in the Uniloc Defendants' patents, including patents that have been found invalid in multiple ways by multiple adjudicators.

109. In one example of a Uniloc Defendant asserting invalid patents, Uniloc USA sued eight companies, including Apple, on a patent that two courts and the PTAB have found invalid. Uniloc USA asserted U.S. Patent No. 6,993,049 (the "'049 patent"), titled "Communication System," in the following cases:

[34] Patent Owner Preliminary Response to Petition, *Unified Patents Inc. v. Uniloc Luxembourg, S.A.*, IPR2017-01850, Paper No. 6 (PTAB Nov. 30, 2017).

[35] Transcript of Proceedings, *Uniloc USA, Inc. v. Apple Inc.*, No. 3:18-cv-00359 (N.D. Cal. June 28, 2018) (WHA).

- *Uniloc USA, Inc. v. Apple Inc.*, No. 1:18-cv-00164 (W.D. Tex.), subsequently transferred as 5:19-cv-01695 (N.D. Cal.) (LHK)
- *Uniloc USA, Inc. v. Samsung Electronics America, Inc.*, No. 2:18-cv-00040 (E.D. Tex.)
- *Uniloc USA, Inc. v. Logitech, Inc.*, No. 5:18-cv-01304 (N.D. Cal.) (LHK)
- *Uniloc USA, Inc. v. LG Electronics USA, Inc.*, No. 3:18-cv-00559 (N.D. Tex.), subsequently transferred as 5:18-cv-06738 (N.D. Cal.) (LHK)
- *Uniloc USA, Inc. v. Huawei Device USA, Inc.*, No. 2:18-cv-00074 (E.D. Tex.)
- *Uniloc USA, Inc. v. ZTE (USA), Inc.*, No. 2:18-cv-00307 (E.D. Tex.), subsequently transferred as 3:18-cv-02839 (N.D. Tex.)
- *Uniloc USA, Inc. v. Blackberry Corp.*, No. 3:18-cv-01885 (N.D. Tex.)
- *Uniloc USA, Inc. v. Microsoft Corp.*, No. 8:18-cv-01279 (C.D. Cal.)

110. On April 5, 2019, a court in the Eastern District of Texas held that there were multiple bases to conclude that asserted claims 1 and 8 of the '049 patent are indefinite.[36] On July 2, 2019, Uniloc USA, Uniloc Luxembourg, and Uniloc 2017 jointly filed with defendants Huawei Device USA, Inc. and Huawei Device Co. Ltd a Joint Motion to Dismiss with Prejudice, in which dismissal of the Uniloc Defendants' claims was sought to be "conditioned on the Court's vacating the Claim Construction Memorandum Opinion and Order . . . entered April 5, 2019."[37] By seeking to dismiss without prejudice, the Uniloc Defendants attempted to avoid having final judgment entered finding the '049 patent invalid, allowing the Uniloc Defendants to continue to pursue baseless claims using that patent. The court denied the Uniloc Defendants' ploy, ordering on July 9, 2019 that the parties were to file a "new motion to dismiss that is not conditioned upon the Court vacating the Claim Construction Memorandum Opinion and Order."[38]

[36] Claim Construction Memorandum and Order, *Uniloc USA, Inc. v. Samsung Elecs. America, Inc.*, Nos. 2:18-cv-00040, 2:18-cv-00074 (E.D. Tex. Apr. 5, 2019).
[37] Joint Motion to Dismiss, *Uniloc USA, Inc. et al v. Huawei Device USA, Inc. et al*, No. 2:18-cv-00074 (E.D. Tex. July 2, 2019), Dkt 58.
[38] Order Denying Motion to Dismiss, *Uniloc USA, Inc. et al v. Huawei Device USA, Inc. et al*, No. 2:18-cv-00074 (E.D. Tex. July 9, 2019), Dkt 59.

111. Finally, on July 22, 2019, the PTAB instituted an *inter partes* review of the '049 patent, concluding that Apple's "Petition establishes a reasonable likelihood that [Apple] would prevail in showing claims 11 and 12 [of the '049 patent] are unpatentable" as obvious in light of multiple prior art references.[39] In its Final Written Decision, the PTAB found all challenged claims to be unpatentable.[40]

112. The '049 patent is far from the only invalid patent the Uniloc Defendants assert in litigation. For example, the Uniloc Defendants have asserted U.S. Patent Nos. 6,868,079 ("the '079 patent"), 7,020,106 ("the '106 patent"), 7,020,252 ("the '252 patent"), and 7,167,487 ("the '487 patent") in at least forty-one litigations, including in those against Apple.

113. Following the Uniloc Defendants' lawsuits against Apple based on the '079, '106, '252, and '487 patents, Apple petitioned for *inter partes* review of the relevant patent at-issue. In nearly every instance, the PTAB instituted review and found all challenged claims to be unpatentable: The PTAB concluded that all challenged claims of the '487 patent[41] and the '079 patent[42] are unpatentable and that three of the four challenged claims of the '106 patent[43] are unpatentable, and it has instituted *inter partes* review of the challenged claim of the '252 patent.[44]

114. The Uniloc Defendants have also asserted claims without regard to the merits of their infringement allegations. For example, in *Uniloc USA, Inc. v. Apple Inc.*, No. 2:17-cv-00470 (E.D. Tex.), subsequently transferred as 4:18-cv-00362 (N.D. Cal.) (PJH), Uniloc USA and Uniloc Luxembourg asserted that Apple's iPhones, iPads, and Watches infringe U.S. Patent No. 7,690,556

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[39] *Apple Inc. v. Uniloc 2017 LLC*, No. IPR2019-00251, Paper No. 7 (PTAB July 22, 2019).
[40] *Apple Inc. v. Uniloc 2017 LLC*, No. IPR2019-00251, Paper No. 22 (PTAB July 20, 2020).
[41] *See Apple Inc. v. Uniloc 2017 LLC*, IPR2019-00252, Paper No. 28 (PTAB May 19, 2020); *Apple Inc. v. Uniloc 2017 LLC*, IPR2019-00222, Paper No. 28 (PTAB May 19, 2020).
[42] *See Apple Inc. v. Uniloc 2017 LLC*, IPR2019-00510, Paper No. 21 (PTAB July 22, 2020). Apple withdrew its challenge to claim 18 of the '079 patent after PTAB instituted *inter partes* review. *See id.* at 2.
[43] *See Apple Inc. v. Uniloc 2017 LLC*, IPR2019-00219, Paper No. 24 (PTAB Apr. 13, 2020). In response to a separate petition from Apple to review claims 15, 17, and 18 of the '106 patent—claims that the PTAB found unpatentable in IPR2019-00219 based on different unpatentability grounds—the PTAB denied instituting *inter partes* review. *See Apple Inc. v. Uniloc 2017 LLC*, IPR2019-00220, Paper No. 10 (PTAB May 9, 2019).
[44] *See Apple Inc. v. Uniloc 2017 LLC*, IPR2019-01667, Paper No. 7 (PTAB Apr. 21, 2020).

(the "'556 patent"). The '556 patent claims a "step counter system," which comprises "an accelerometer to detect motion of a user, a step calculation logic to utilize the motion detected by the accelerometer to detect and count steps, and an incline logic to calculate an incline of a surface on which the user moved." The complaint accused Apple's products "that incorporate hardware (such as an accelerometer, inclinometer, altimeter and/or barometer) and software (such as the Health app in iOS 8.0.x, iOS 9.0.x, iOS 10.0.x and watchOS versions) that are capable of calculating the number of steps taken (*e.g.*, 'Steps') and distance covered (*e.g.*, 'Walking + Running Distance') by a user as well as the user's change in elevation (*e.g.*, 'Flights Climbed')." But Apple's products do not use an accelerometer to determine elevation change or incline. Indeed, an analysis of the '556 patent commissioned by its former owner, Fullpower Technologies, Inc. (Fullpower), observed that accelerometers in current fitness trackers, including those in Apple products, "do not monitor how much the foot is going up and how much is coming down," as required by the claims. Instead, as the Fullpower analysis noted, the incline measurements in the tracking devices "com[e] from the barometer/altimeter instead of the accelerometer."[45] Apple obtained this analysis through third-party discovery from Fullpower. Uniloc USA and Uniloc Luxembourg refused to reveal to Apple whether it knew of the analysis performed for Fullpower before filing suit. Uniloc USA and Uniloc Luxembourg either ignored this information or was willfully blind to it before bringing a meritless case against Apple.

115. Beyond the '556 patent being not infringed, nearly every claim was found invalid as indefinite in Uniloc USA, Uniloc Luxembourg's case against Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. ("Samsung").[46] The Uniloc Defendants litigated the case against Samsung all the way until the days leading up trial, when it voluntarily dismissed the case.

116. Notwithstanding the weakness of its claim on the '556 patent, Uniloc USA and Uniloc Luxembourg have disclosed that they believe they are entitled to damages of between $1.41

[45] *Uniloc USA, Inc. v. Apple Inc.*, 4:18-cv-00362 (N.D. Cal. Mar. 14, 2018) (PJH), Dkt. 120-2.
[46] Claim Construction Memorandum & Order, *Uniloc USA, Inc., v. Samsung Elecs. America, Inc.*, No. 2:17-cv-651 (E.D. Tex. Oct. 24, 2018), Dkt. 77. The complaint was originally filed by Uniloc USA and Uniloc Luxembourg and Uniloc 2017 later joined.

and $2.75 per Apple product, for total damages in the range of $375 to $732 million. The apparent precision of the per-unit damages request is a facade; Uniloc USA and Uniloc Luxembourg simply adopted the amounts that Apple sought from Samsung in litigation for Apple's patents. Uniloc USA and Uniloc Luxembourg have adopted this approach to damages in multiple cases against Apple in complete disregard for the technology claimed in the asserted patents. In another three cases filed by the Uniloc Defendants, they allege they are entitled to damages of $2 per Apple product. Based on these demands, the Uniloc Defendants have suggested that they are entitled to between $4.3 and $6.8 billion in damages from just seven of its 25 cases against Apple:

Case	**Patent**	**Per Unit Damages**	**Damages**
Uniloc USA, Inc. v. Apple Inc., No. 5:18-cv-00357 (N.D. Cal.) (LHK)	8,239,852: "Remote Update of Computers Based on Physical Device Recognition"	$1.41 - $2.75	$756,709,869 - $1,475,852,582
	9,414,199: "Predictive Delivery of Information Based on Device History"	$1.41 - $2.75	$186,200,370 - $363,156,750
Uniloc USA, Inc. v. Apple Inc., No. 4:18-cv-00361 (N.D. Cal.) (PJH)	8,872,646: "Method and System for Waking Up a Device Due to Motion"	$1.41 - $2.75	$166,933,405 - $325,579,336
Uniloc USA, Inc. v. Apple Inc., No. 4:18-cv-00362 (N.D. Cal.) (PJH)	7,690,556: "Step Counter Accounting for Incline"	$1.41 - $2.75	$375,273,911 - $731,917,202
Uniloc USA, Inc. v. Apple Inc., No. 4:18-cv-00364 (N.D. Cal.) (PJH)	7,653,508: "Human Activity Monitoring Device"	$1.41 - $2.75	$375,273,911 - $731,917,202
	7,881,902: "Human Activity Monitoring Device"	$1.41 - $2.75	$375,273,911 - $731,917,202
	8,712,723: "Human Activity Monitoring Device"	$1.41 - $2.75	$375,273,911 - $731,917,202
Uniloc USA, Inc. et al. v. Apple Inc., 5:19-cv-01692 (N.D. Cal.) (EJD)	7,587,207: "Data Delivery through Beacons"	$2.00	$1,100,000,000

Case	Patent	Per Unit Damages	Damages
Uniloc 2017 LLC v. Apple Inc., 3:19-cv-01904 (N.D. Cal.) (WHO)	7,136,999: "Method and System for Electronic Device Authentication"	$2.00	$162,240,692[47]
Uniloc 2017 LLC v. Apple Inc., 5:19-cv-01929 (N.D. Cal.) (EJD)	7,020,252: "Group Audio Message Board"	$2.00	$489,607,520
Total			**$4,362,787,500 - $6,844,105,688**

117. Information to evaluate these damages demands, as well as even basic information like how many patents Uniloc has acquired, has been kept obscured. The Federal Circuit remarked as much on July 9, 2020, when it found that sealing requests filed by Uniloc were "grossly excessive" and Uniloc's "flouting of Local Rule 79-5 particularly flagrant."[48] Another court recently found good cause to unseal information originally redacted by Uniloc regarding the number of patents transferred from prior owners.[49] Uniloc has even gone so far as to obscure the specific patents it owns. For example, it recorded a version of a patent assignment agreement with the USPTO that, compared to produced versions of the exact same agreement, omit a specific patent later asserted against Apple—specifically, obscuring ownership of U.S. Patent No. 8,872,646 and its foreign counterparts.

[47] On April 28, 2020, Uniloc 2017 submitted Corrected Supplemental Damages Contentions, in which it moved the date on which the claimed damages began to accrue approximately six years earlier and eliminated the total damages figure based on the incorrect date. As a result, the $162,240,692 total likely understates Uniloc 2017's damages figure for infringement of the '999 patent.

[48] *Uniloc 2017 LLC v. Apple Inc.*, No. 19-1922, at 13 (Fed. Cir. July 9, 2020).

[49] *Uniloc USA, Inc. v. Apple Inc.*, No. 5:19-cv-01692-EJD, Dkt. 142 (N.D. Cal. July 31, 2020).

REDACTED VERSION OF DOCUMENT SOUGHT TO BE SEALED

Application Number	Patent Number	Country	Title
09/590,859	7197144	US	METHOD AND APPARATUS TO AUTHENTICATE A USER'S SYSTEM TO PREVENT UNAUTHORIZED USE OF SOFTWARE PRODUCTS DISTRIBUTED TO USERS
11/644455	7653508	US	HUMAN ACTIVITY MONITORING DEVICE
11/698633	7690556	US	STEP COUNTER ACCOUNTING FOR INCLINE
12/694135	7881902	US	HUMAN ACTIVITY MONITORING DEVICE
13/018321	8712723	US	HUMAN ACTIVITY MONITORING DEVICE
12/247950	8872646	US	METHOD AND SYSTEM FOR WAKING UP A DEVICE DUE TO MOTION
09/727727	7092671	US	METHOD AND SYSTEM FOR WIRELESSLY AUTODIALING A TELEPHONE NUMBER FROM A RECORD STORED ON A PERSONAL INFORMATION DEVICE
10/712451	7330013	US	APPARATUS AND METHOD FOR CHARGING AND DISCHARGING A BATTERY
08/430943	6580422	US	REMOTE COMPUTER DISPLAY USING GRAPHICS PRIMITIVES SENT OVER A WIRELESS LINK
10/011140	6661203	US	BATTERY CHARGING AND DISCHARGING SYSTEM OPTIMIZED FOR HIGH TEMPERATURE ENVIRONMENTS
09/181431	6161134	US	METHOD, APPARATUS AND COMMUNICATIONS SYSTEM FOR COMPANION INFORMATION AND NETWORK APPLIANCES
09/451388	6446127	US	SYSTEM AND METHOD FOR PROVIDING USER MOBILITY SERVICES ON A TELEPHONY NETWORK
09/237609	6216158	US	SYSTEM AND METHOD USING A PALM SIZED COMPUTER TO CONTROL NETWORK DEVICES
09/558413	6622018	US	PORTABLE DEVICE CONTROL CONSOLE WITH WIRELESS CONNECTION
09/246606	6363053	US	METHOD AND APPARATUS FOR MEASUREMENT-BASED CONFORMANCE TESTING OF SERVICE LEVEL AGREEMENTS IN NETWORKS
10/671375	8539552	US	SYSTEM AND METHOD FOR NETWORK BASED POLICY ENFORCEMENT OF INTELLIGENT-CLIENT FEATURES
09/303832	6731642	US	
10/834418	7573873	US	INTERNET TELEPHONY USING NETWORK ADDRESS TRANSLATION
09/728833	6856616	US	SYSTEM AND METHOD FOR PROVIDING SERVICE PROVIDER CONFIGURATIONS FOR TELEPHONES USING A CENTRAL SERVER IN A DATA NETWORK TELEPHONY SYSTEM
10/259542	7240200	US	SYSTEM AND METHOD FOR GUARANTEEING SOFTWARE INTEGRITY VIA COMBINED HARDWARE AND SOFTWARE AUTHENTICATION

Exhibit A-2

UNILOC_APPLE_2017_16306

Application Number	Patent Number	Country	Title
09/590,859	7197144	US	METHOD AND APPARATUS TO AUTHENTICATE A USER'S SYSTEM TO PREVENT UNAUTHORIZED USE OF SOFTWARE PRODUCTS DISTRIBUTED TO USERS
11/644455	7653508	US	HUMAN ACTIVITY MONITORING DEVICE
11/698633	7690556	US	STEP COUNTER ACCOUNTING FOR INCLINE
12/694135	7881902	US	HUMAN ACTIVITY MONITORING DEVICE
13/018321	8712723	US	HUMAN ACTIVITY MONITORING DEVICE
09/727727	7092671	US	METHOD AND SYSTEM FOR WIRELESSLY AUTODIALING A TELEPHONE NUMBER FROM A RECORD STORED ON A PERSONAL INFORMATION DEVICE
10/712451	7330013	US	APPARATUS AND METHOD FOR CHARGING AND DISCHARGING A BATTERY
08/430943	6580422	US	REMOTE COMPUTER DISPLAY USING GRAPHICS PRIMITIVES SENT OVER A WIRELESS LINK
10/011140	6661203	US	BATTERY CHARGING AND DISCHARGING SYSTEM OPTIMIZED FOR HIGH TEMPERATURE ENVIRONMENTS
09/181431	6161134	US	METHOD, APPARATUS AND COMMUNICATIONS SYSTEM FOR COMPANION INFORMATION AND NETWORK APPLIANCES
09/451388	6446127	US	SYSTEM AND METHOD FOR PROVIDING USER MOBILITY SERVICES ON A TELEPHONY NETWORK
09/237609	6216158	US	SYSTEM AND METHOD USING A PALM SIZED COMPUTER TO CONTROL NETWORK DEVICES
09/558413	6622018	US	PORTABLE DEVICE CONTROL CONSOLE WITH WIRELESS CONNECTION
09/246606	6363053	US	METHOD AND APPARATUS FOR MEASUREMENT-BASED CONFORMANCE TESTING OF SERVICE LEVEL AGREEMENTS IN NETWORKS
10/671375	8539552	US	SYSTEM AND METHOD FOR NETWORK BASED POLICY ENFORCEMENT OF INTELLIGENT-CLIENT FEATURES
09/303832	6731642	US	
10/834418	7573873	US	INTERNET TELEPHONY USING NETWORK ADDRESS TRANSLATION
09/728833	6856616	US	SYSTEM AND METHOD FOR PROVIDING SERVICE PROVIDER CONFIGURATIONS FOR TELEPHONES USING A CENTRAL SERVER IN A DATA NETWORK TELEPHONY SYSTEM
10/259542	7240200	US	SYSTEM AND METHOD FOR GUARANTEEING SOFTWARE INTEGRITY VIA COMBINED HARDWARE AND SOFTWARE AUTHENTICATION

Exhibit A-2

PATENT
REEL: 046532 FRAME: 0112

118. Disclosures also have inconsistently listed the corporate relationships amongst the entities, including listing Uniloc USA, Inc. as "wholly owned by Uniloc USA Holdings LLC" in this case (Dkt. 176) (June 10, 2020), while elsewhere listing in other operative pleadings Uniloc USA, Inc.'s parent as Uniloc Corporation Pty Ltd.[50]

119. As the number of times that the Uniloc Defendants' cases against Apple have been transferred out of Texas—shown in the list above in paragraph 103—makes clear, the Uniloc Defendants have time and again sought to impose the additional burden on Apple of litigating in an inconvenient forum. Uniloc Defendants have gone so far as to misrepresent facts about its connections to Texas and lack of connections to California in an effort to fend off Apple's requests to have cases transferred to this District. In *Uniloc USA, Inc. v. Apple Inc.*, No. 2:17-cv-00258 (E.D. Tex.), the court detailed a series of deceptive statements made by Uniloc USA and Uniloc Luxembourg, concluding that such "contradictory representations [are] troubling, particularly

[50] No. 19-1922, Dkt. 4 (Fed. Cir. June 7, 2019).

because they are not isolated exceptions." For example, Uniloc USA and Uniloc Luxembourg made repeated misrepresentations about their lack of connection to California[51]:

> Mr. Burdick, Uniloc's only party witness residing within the Eastern District of Texas, does not spend the majority of his time in the Plano office. (Dkt. No. 60-2, Ex. B at 2.) Mr. Burdick spends equally as much time in Plano, as he does in Boise, Idaho and in southern California. (*Id*.) In addition, Mr. Etchegoyen [the CEO of Uniloc Luxembourg] spends about twenty percent of his time in either Newport Beach or Irvine, California and owns a residence in Newport Beach, which he uses when he "is doing business in Orange County." (*Id*.; Dkt. No. 60-1, Ex. A at 160:15–16.) Both Mr. Burdick and Mr. Etchegoyen have held around one hundred "top-level strategy meetings" in southern California, for Uniloc business purposes. (Dkt. No. 60-1, Ex. A at 54:2–55:11.) Mr. Etchegoyen separately travels to southern California every month to meet with Mr. Turner, Uniloc Luxembourg S.A.'s CFO. (Dkt. No. 60-1, Ex. A at 47:18–25.) All of these facts fly in the face of Uniloc's prior representations: that Uniloc had only one full-time employee, Tanya Kiatkulpiboone, working at its office in Irvine, California as of April 2017 (Dkt. No. 30-7, Burdick Decl. ¶ 10); that Mr. Etchegoyen has lived in Hawaii since well before the filing date of the Complaint and does not maintain a residence in California (Dkt. No. 30 at 12); and that Mr. Burdick does not work in California (Dkt. No. 43 at 2 n.3 [(]"Apple also repeats its erroneous assertion that Uniloc's IP counsel lives and works in California."); and that Apple "attempts to exaggerate Uniloc's ties to California" (Dkt. No. 30 at 1–2).

120. As non-practicing entities, the Uniloc Defendants cannot credibly seek injunctions in U.S. litigation under the Supreme Court's decision in *eBay Inc. v. MercExchange, LLC*, 547 U.S. 388 (2006), but they do not face the same limitations in Europe where injunctions may be automatically granted if infringement is found. Accordingly, Uniloc Luxembourg has sought to enjoin Apple in litigation in Germany as leverage to coerce Apple to accept unreasonable licensing terms—including for its U.S. patents—or face the risk of having its business shut down. In Uniloc Luxembourg's first case to proceed to trial against Apple, in Germany, it was Fortress employees who attended and consulted during the trial with outside counsel for Uniloc Luxembourg. As with the rest of its cases against Apple to date, the court found the allegation meritless, here based on

[51] Memorandum Order and Opinion at 16-17, *Uniloc USA, Inc. v. Apple Inc.*, No. 2:17-cv-00258 (E.D. Tex. Dec. 22, 2017).

Apple not infringing the patent, and dismissed the case (a decision that Uniloc Luxembourg has appealed).

B. VLSI

121. On October 2, 2017, VLSI filed a suit against Intel in the Northern District of California, asserting eight patents against virtually every one of Intel's microprocessors ever sold since 2011 (the "VLSI California Action").[52] Despite VLSI's aggressive litigation strategy in that case, it suffered numerous setbacks, including losing various discovery- and damages-related disputes. After the PTAB instituted *inter partes* review proceedings to evaluate the patentability of the claims in six of the asserted patents, the parties stipulated to a stay of the Northern District of California case in March 2019.

122. Apparently unhappy with the setbacks it was encountering in the Northern District of California, VLSI also set its sights on Delaware. On June 28, 2018, VLSI filed suit in the District of Delaware asserting five different patents against many of the same products accused in the VLSI California Action (the "VLSI Delaware Action").[53] Since its filing, the VLSI Delaware Action has imposed substantial burdens on Intel: the parties have engaged in extensive discovery, with Intel having produced over a million pages of documents related to the accused products and 2.5 TB of source code, and thousands of pages of noninfringement and invalidity contentions.

123. On March 1, 2019—***the same day*** that VLSI agreed to stay the VLSI California Action—VLSI filed yet another suit in the District of Delaware, asserting six new patents against many of the same products at issue in the previous cases.[54]

124. Evidently concerned that the VLSI Delaware Action and second suit in Delaware might be consolidated, VLSI again abandoned its litigation in hopes of obtaining a favorable outcome elsewhere. On April 11, 2019, just hours after Intel filed its reply brief in support of its motion to consolidate—and without any warning—VLSI voluntarily dismissed the second suit in

[52] *VLSI Tech. LLC v. Intel Corp.*, No. 5:17-cv-05671 (N.D. Cal. Oct. 2, 2017) (BLF).
[53] *VLSI Tech. LLC v. Intel Corp.*, No. 1:18-cv-00966 (D. Del. June 20, 2018).
[54] *VLSI Tech. LLC v. Intel Corp.*, No. 1:19-cv-00426 (D. Del. Mar. 1, 2019).

Delaware and, ***that same day***, filed three suits in the Western District of Texas (the "VLSI Texas Actions"),[55] asserting the same six patents at issue in second Delaware suit, as well as two additional patents.

125. VLSI claims up to $7.1 billion in connection with eight patents in the VLSI California Action and multiple billions of dollars in damages in the VLSI Delaware Action. These inflated numbers are a product of transferring the patents to VLSI and employing them in Fortress's unlawful aggregation scheme, including the fact that VLSI does not invent, produce, or sell any products. For example, before VLSI acquired certain of the patents asserted against Intel in the Delaware I Action, [redacted]

126. VLSI, at Fortress's direction, can and does take advantage of the fact that it produces nothing at all and therefore has no desire or need for dispute resolution. Because VLSI's litigation costs and risks are trivial in comparison with those of the product companies it sues, it can afford to bring these types of serial suits based on weak or low-value patents under the theory that even a modest settlement for supracompetitive royalties will be profitable.

127. As a non-practicing entity, VLSI cannot credibly seek injunctions in U.S. litigation under the Supreme Court's decision in *eBay Inc. v. MercExchange, LLC*, 547 U.S. 388 (2006). Faced with this problem, VLSI is seeking to enjoin Intel in multiple litigations in China, as leverage to coerce Intel to accept unreasonable licensing terms—including for its U.S. patents—or face the risk of having its business shut down.

C. INVT

128. [redacted]

[55] *VLSI Tech. LLC v. Intel Corp.*, No. 6:19-cv-00254 (W.D. Tex. Apr. 11, 2019); *VLSI Tech. LLC v. Intel Corp.*, No. 6:19-cv-00255 (W.D. Tex. Apr. 11, 2019); *VLSI Tech. LLC v. Intel Corp.*, No. 6:19-cv-00256 (W.D. Tex. Apr. 11, 2019).

[redacted]. Following that offer, Apple and Inventergy engaged in licensing negotiations.

129. INVT sued Apple and HTC in May 2017 in the District of New Jersey. INVT has asserted eight patents that it claims are essential to cellular standards. On August 29, 2017, INVT filed suit against ZTE Corporation ("ZTE"), in which it has asserted the same eight patents.

130. [redacted] Apple nonetheless informed INVT in July 2018 that it remained willing to negotiate and asked INVT to identify the specific patents it was seeking to license.

131. Before responding to Apple's request and apparently dissatisfied with the pressure it could exert through district court litigation alone, on September 14, 2018, INVT asserted five of the patents from the District of New Jersey action against Apple, HTC, and ZTE in the International Trade Commission seeking an order excluding the accused products from importation into the United States.

132. The International Trade Commission delegated to the Administrative Law Judge overseeing the litigation the responsibility to assess the implications for the public interest of INVT seeking an exclusion order on claimed-essential patents. An evidentiary hearing in the case was held in September 2019. In the February 2020 Initial Determination, the Administrative Law Judge found that: "INVT failed to prove that claim 4 of the [7,206,587] patent and claims 3 and 4 of the [6,760,590] patent are essential to the 3G and LTE standards" and that "INVT failed to prove that independent claim 1 of the [7,848,439] patent is essential to the LTE standard."[56] The Commission upheld this decision.

[56] *In the Matter of Certain LTE- and 3G-Complaint Cellular Communications Devices*, Inv. No. 337-TA-1138, Paper No. 63 (ITC Feb. 18, 2020) (capital letters removed).

D. IXI IP

133. IXI R&D and IXI IP (collectively, "IXI") brought suit, in the Southern District of New York, against Samsung and BlackBerry Limited and BlackBerry Corporation ("BlackBerry") on June 17, 2014 and June 18, 2014 respectively, on the same set of four patents in each case. IXI voluntarily dismissed without prejudice their complaint against BlackBerry on February 5, 2019.

134. IXI also sued Apple on the same patents on October 2, 2014 in the Southern District of New York. On May 11, 2015, IXI and Apple jointly stipulated to dismiss with prejudice one of the patent claims at issue in the case.

135. On December 21, 2016, the PTAB found unpatentable every asserted claim of one of the remaining patents-in-suit in *inter partes* review proceedings.[57] While the PTAB's decision was on appeal, IXI filed an *ex parte* reexamination of the patent. The patent issued from reexamination with one amended claim and 68 new claims. U.S. Patent No. 7,039,033 (requested Mar. 24, 2017) (issued Feb. 1, 2018). IXI obtained the reexamined claims by adding trivial additional limitations—like a "speaker," a "microphone," and a "touchscreen"—that make the new claims no more novel than the canceled claims. Due to the triviality of their additional limitations, the reexamined claims are currently under review in a second reexamination proceeding. On July 29, 2020, the USPTO issued an action in the second reexamination proceeding rejecting all 68 claims as invalid on numerous prior art grounds.[58]

136. Similarly, on December 21, 2016, the PTAB found unpatentable all but one of the asserted claims of another asserted patent, U.S. Patent No. 7,295,532 (the "'532 patent").[59] The USPTO thereafter instituted a reexamination of the '532 patent challenging, among other claims, the sole originally-asserted claim that was not instituted as part of the *inter partes* review. In the subsequent *ex parte* reexamination proceedings, all challenged claims, including the lone remaining originally-asserted claim, were rejected.[60] In response, IXI sought to add numerous

[57] *See Samsung Elecs. v. IXI IP, LLC*, IPR2015-01444, Paper No. 27 (PTAB Dec. 21, 2016).
[58] Office Action (mailed July 27, 2020).
[59] *See Samsung Elecs. v. IXI IP, LLC*, IPR2015-01443, Paper No. 27 (PTAB Dec. 21, 2016).
[60] Office Action (mailed Sept. 25, 2018).

new claims and argue for patentability of the challenged claims. IXI eventually disclaimed its originally-asserted claim, and the patent issued from reexamination with one amended claim and fifteen new claims. U.S. Patent No. 7,295,532 (requested Apr. 3, 2018) (issued June 17, 2020).

137. In 2019, IXI subsequently moved to amend its infringement contentions in the litigation against Apple to assert certain unspecified newly-issued claims of the '033 patent and additional unspecified claims of the '532 patent that had not yet even been allowed by the USPTO.[61] IXI thereby sought to restart the litigation that it comprehensively lost five years after the complaint was filed. Apple opposed IXI's motion, arguing that IXI's attempt to insert reexamined claims into the litigation should be barred by res judicata.[62] The court denied IXI's motion to amend its infringement contentions, but it did not decide whether res judicata bars IXI from asserting its reexamined claims against Apple. Apple and Samsung subsequently filed complaints seeking a declaratory judgment that res judicata bars IXI from asserting the reexamined claims and, in the alternative, that the reexamined claims are not infringed and are invalid.

138. Apple also filed *inter partes* review petitions on the reexamined claims of the '033 patent in 2018, but the PTAB denied institution because—even though the new claims did not exist during the year after the complaint was filed—the PTAB concluded that the petitions were time-barred.[63] IXI thus attempts to immunize its patent from *inter partes* review challenge.

E. Seven Networks

139. In May 2017, Seven Networks sued ZTE and Samsung in the Eastern District of Texas on the same set of seven patents in both cases and also asserted those patents plus three others against Google. Seven Networks voluntarily dismissed its case against ZTE a month later before refiling the same patents. In November 2018, Seven Networks asserted another group of six patents against Samsung and Google.

[61] *IXI Mobile (R&D) Ltd. v. Apple Inc.*, No. 4:15-cv-3755 (N.D. Cal. Mar. 7, 2019) (HSG), Dkt. 157.
[62] *Id*. Dkt. 164.
[63] *Apple Inc., v. IXI IP, LLC*, IPR2019-00124, Paper No. 13 (PTAB June 3, 2019).

140. Seven Networks eventually obtained settlements with ZTE, Samsung, and Google.[64]

141. Seven Networks sued Apple on April 10, 2019 in the Eastern District of Texas, asserting sixteen patents against Apple related to a wide range of Apple products and services. Per the complaint, Seven Networks is listed as the "assignee of all rights, title, and interest in" for each of the sixteen patents-in-suit.

F. KIP CR P1

142. Since receiving a loan from Fortress Credit in 2013, Crossroads has asserted eight separate patent actions in the Western District of Texas against Dot Hill Systems Corp.; Oracle Corporation; Huawei Technologies Co., Ltd.; Huawei Enterprise USA, Inc.; Huawei Technologies USA, Inc.; Cisco Systems, Inc.; NetApp, Inc.; and Quantum Corporation claiming infringement of some combination of U.S. Patent Nos. 6,425,035 (the "'035 patent"), 7,051,147 (the "'147 patent"), 7,934,041 (the "'041 patent"), and 7,987,311 (the "'311 patent"). Specifically, Crossroads alleged in each of the eight actions that the '035 patent was infringed, and in seven of the actions that the '041 patent was infringed.

143. In Final Written Decisions dated January 29, 2016 and March 17, 2016, the PTAB found in *inter partes* review proceedings all asserted claims of the asserted '035 and '041 patents were invalid. The U.S. Court of Appeals for the Federal Circuit affirmed that decision on June 6, 2017.

144. Fortress and KIP CR P1 agreed to step into the place of Crossroads in these litigations notwithstanding the PTAB and Federal Circuit findings. Fortress's subsequent writs of certiorari to the Supreme Court challenging the constitutionality of the PTAB's *inter partes* review process were denied on April 30, 2018. Each of these actions was ultimately dismissed.

[64] *Seven Networks, LLC v. ZTE (USA) Inc.*, No. 3:17-cv-1495 (N.D. Tex. Aug. 14, 2019), Dkt. 318; *Seven Networks, LLC v. Samsung Elecs. Co., Ltd.*, No. 2:17-cv-441 (E.D. Tex. Dec. 28, 2018), Dkt. 67; *Seven Networks, LLC v. Google LLC*, No. 2:17-cv-442 (E.D. Tex. Jan. 20, 2019), Dkt. 608.

III. ELIMINATION OF COMPETITION ENABLING EXTRACTION OF SUPRACOMPETITIVE ROYALTIES IN SPECIFIC PATENT MARKETS

145. Fortress obfuscates the patent aggregation scheme that it accomplishes in concert with Defendant PAEs by using a web of entities to assemble and assert substitute and complementary patents in certain technological areas. That structure hides the full extent of the patent aggregation carried out by Fortress and Defendant PAEs and accentuates the anticompetitive effects of Fortress's patent aggregation scheme. The following chart shows the relationships between Fortress, Defendant PAEs, and other Fortress-controlled entities that Fortress employs to increase its market power:

146. Despite Defendants' obfuscation and prior to discovery, Apple and Intel have determined that, through the agreements between Fortress and the various PAE Defendants and patent transactions discussed above, Defendants have aggregated under Fortress's control at least the substitute patents in certain technology areas relevant to electronic devices and components or software therein and processes used to manufacture them discussed below. Defendants have then taken advantage of the market power or enhanced market power they have obtained from eliminating competition to extract supracompetitive royalties from many target product suppliers.

147. To be clear, the specific markets discussed below are defined by the function that competing technologies contained therein perform, not by the particular type of device in which that function is incorporated.[65]

A. Network-based Voice Messaging

148. Fortress, the Uniloc Defendants, Seven Networks, and INVT have aggregated patents relating to network-based voice messaging. Network-based voice messaging allows for multiple recipients to access the same voice message. This is a common feature that many

[65] The substitute and complementary patents aggregated pursuant to Defendants' anticompetitive scheme relate to high-tech electronics devices and components. To the extent the patents discussed herein have implications for products like home appliances, it is because such products incorporate high-tech electronics components that, for instance, enable a refrigerator to connect to the Internet for purposes of monitoring and controlling the device.

electronic devices, such as smartphones, incorporate, and there is no close substitute for the functionality.

149. Defendants and Seven Networks have aggregated patents in an antitrust market for patents purporting to cover network-based voice messaging capabilities, the "Network-based Voice Messaging Patents Market."[66] The Network-based Voice Messaging Patents Market constitutes a relevant antitrust market where Fortress (either directly through its PAE subsidiaries or by acting in concert with the PAEs in which it invests) and other holders of patents claimed to read on electronic devices that support network-based voice messaging compete with one another to license patents to suppliers of such devices and supporting software.

150. Among the substitute patents Defendants and Seven Networks have aggregated in the Network-based Voice Messaging Patents Market are U.S. Patent No. 7,020,252, U.S. Patent No. 7,535,890, U.S. Patent No. 8,243,723, U.S. Patent No. 8,724,622, and U.S. Patent No. 8,995,433, all of which purport to cover alternative techniques to enable multiple recipients to access a voice message.

151. U.S. Patent No. 7,020,252 ("the '252 patent") is titled "Group Audio Message Board" and issued on March 28, 2006. According to its abstract, the '252 patent relates to "[a] communications system . . . comprising a communal audio message recordal apparatus GAMB [] with multiple users [] enabled to record and access recorded messages." Its claims are directed to a community messaging system (e.g., voice chat rooms with recorded messages accessible to multiple people).

152. On its face, the '252 patent is assigned to Koninklijke Philips Electronics N.V. ("Philips"). On January 30, 2009, Philips assigned the '252 patent to IPG Electronics 503 Limited ("IPG Electronics 503"). On April 10, 2012, IPG Electronics 503 assigned the '252 patent to Pendragon Wireless LLC ("Pendragon Wireless"). On January 31, 2018, Pendragon Wireless

[66] The Network-based Voice Messaging Patents Market and other antitrust markets defined in Section III are collectively referred to as "Relevant Patents Markets." The geographic scope of each of the Relevant Patents Markets is the United States, as patents are national in scope.

assigned the '252 patent to Defendant Uniloc Luxembourg. Less than five months later, on May 3, 2018, Defendant Uniloc Luxembourg assigned the '252 patent to Defendant Uniloc 2017.

153. U.S. Patent No. 7,535,890 ("the '5890 patent") is titled "System and Method for Instant VoIP Messaging" and issued on May 19, 2009. According to its abstract, the '5890 patent relates to "an instant voice messaging system (and method) for delivering instant messages over a packet-switched network." Its claims are directed to instant voice messaging, where the voice messages are available to multiple recipients.

154. On its face, the '5890 patent is assigned to Ayalogic, Inc. ("Ayalogic"). On July 16, 2013, Ayalogic assigned the '5890 patent to Empire IP LLC ("Empire IP"). On June 10, 2016, Empire IP assigned the '5890 patent to Defendant Uniloc Luxembourg, and the patent was thereby made subject to a December 30, 2014 security interest Defendant Uniloc Luxembourg and Defendant Uniloc USA had conveyed to Defendant Fortress Credit. On May 3, 2018, the same day it assigned the '252 patent to Defendant Uniloc 2017, Defendant Uniloc Luxembourg also assigned the '5890 patent to Defendant Uniloc 2017.

155. U.S. Patent No. 8,243,723 ("the '723 patent"), U.S. Patent No. 8,724,622 ("the '622 patent"), and U.S. Patent No. 8,995,433 ("the '433 patent") are in the same patent family as the '5890 patent, are all titled "System and Method for Instant VoIP Messaging," and issued on August 14, 2012, May 13, 2014, and March 31, 2015, respectively. As with the '5890 patent, the '723 patent, the '622 patent, and the '433 patent relate to instant voice messaging over a packet-switched network. More specifically, they are directed to instant voice messaging, where the voice messages are available to multiple recipients.

156. As with the '5890 patent, the '723 patent and the application that led to the '622 patent were assigned by Ayalogic to Empire IP in July 2013. Empire IP thereafter filed the application the led to the '433 patent. Along with the '5890 patent, on June 10, 2016, Empire IP assigned the '723 patent, the '622 patent, and the '433 patent to Defendant Uniloc Luxembourg, thereby subjecting each to a December 30, 2014 security interest Defendant Uniloc Luxembourg and Defendant Uniloc USA had conveyed to Defendant Fortress Credit. And on May 3, 2018,

along with the '5890 patent, Defendant Uniloc Luxembourg assigned the '723 patent, the '622 patent, and the '433 patent to Defendant Uniloc 2017.

157. In addition to the patents discussed immediately above, which are substitutes for one another, Defendants have aggregated additional patents relating to network-based voice messaging that are complements to, and possibly substitutes for, the '252 patent, the '5890 patent, the '723 patent, the '622 patent, and the '433 patent.

158. U.S. Patent No. 8,838,744 ("the '744 patent") is titled "Web-based Access to Data Objects" and issued on September 16, 2014. According to its abstract, the '744 patent relates to "providing a mobile device with web-based access to data objects." Its claims are directed to a method for retrieving data objects such as sound files from the web using a relay server.

159. On its face, the '744 patent is assigned to Seven Networks, Inc. As noted above, Fortress converted Seven Networks Inc. to Seven Networks LLC in 2015.

160. U.S. Patent No. 7,920,579 ("the '579 patent") is titled "Method, System and Apparatus for Media Gateway to Transmit and Receive Multicast Data" and issued on April 5, 2011. According to its abstract, the '579 patent "provides a method, system and apparatus for [a media gateway] to transmit and receive multicast data." Its claims are directed to multicasting techniques that enable shared access to a media stream.

161. On its face, the '579 patent is assigned to Huawei. On May 15, 2013, Huawei assigned the '579 patent to Inventergy, Inc. On October 1, 2014, Inventergy, Inc. assigned a security interest in the '579 patent to DBD Credit Funding LLC. On December 22, 2016, Inventergy, Inventergy, Inc., eOn Communication Systems, Inc., Inventergy Holding, LLC, Inventergy Innovations, LLC, Inventergy IoT, LLC, and Inventergy LBS, LLC assigned a security interest in the '579 patent to DBD Credit Funding LLC. On April 27, 2017, Inventergy, Inc. assigned the '579 patent to INVT.

162. Defendants' and Seven Networks' aggregation of patents in the Network-based Voice Messaging Patents Market (including at least five substitute patents and two complementary and/or substitute patents) has reduced competition in that market, leading to inflated royalties and

decreased licensing output. For example, the '252 patent and the '5890 patent each purport to cover techniques that enable multiple recipients to access a shared voice message. Specifically, the '252 patent describes a recipient-driven method in which the shared voice message is posted to a communal message board where recipients can access the message. On the other hand, the '5890 patent describes a sender-driven method in which the sender selects the recipients and the message is delivered to the selected recipients. A substitute for posting a voice message to a communal message board includes delivering a voice message to sender-selected recipients, and vice versa. When the '252 and '5890 patents were owned by different entities, a party wishing to use one of these potential substitute technologies would be able to take advantage of competition between the owners of these patents when attempting to secure a license. But because of Defendants' unlawful aggregation of patents, Defendants now control both substitute technologies, eliminating such competition.

163. That lessening of competition is reflected by the evidence of supracompetitive royalties sought and received by Defendants. The prior owners of the '252 patent (Philips, IPG Electronics 503, and Pendragon Wireless) and the '5890 patent, the '433 patent, the '723 patent, and/or the '622 patent (Ayalogic, then Empire IP) never asserted these patents because they would not have been able to obtain royalties sufficient to justify the cost of assertion absent the market power created by the Fortress-led aggregation scheme and the resulting elimination of competition. Likewise, the prior owners would not have transferred the aggregated patents if they could have licensed the patents for the amounts that Defendants have either received or seek in litigation. Defendants have pursued numerous assertions and secured multiple settlements for substantial royalties.

164. Philips is the former assignee of the '252 patent before it was aggregated with the others accumulated by Defendants. Philips is an experienced asserter of patents and has brought many other patent cases against a variety of defendants over the years, indicating that it was capable and willing to do so in the appropriate circumstances. Those cases include at least the following:

- *Koninklijke Philips Electronics NV et al. v. Davenport International Inc. et al.*, No. 2-05-cv-08943 (C.D. Cal.);
- *Koninklijke Philips Electronics NV et al. v. Poso Media LLC*, No. 2-06-cv-02354 (C.D. Cal.);
- *Koninklijke Philips Electronics NV et al. v. International Disc Manufacturers et al.*, No. 2-06-cv-02468 (C.D. Cal.);
- *Koninklijke Philips Electronics NV et al. v. Premier Digital Solutions Inc. et al.*, No. 2-06-cv-05942 (C.D. Cal.);
- *Koninklijke Philips Electronics NV et al. v. Enas Cassette World Inc. et al.*, No. 2-06-cv-06592 (C.D. Cal.);
- *Koninklijke Philips Electronics NV et al. v. New Century Optical Inc. et al.*, No. 2-06-cv-06773 (C.D. Cal.);
- *Koninklijke Philips Electronics NV et al. v. Power Media CD Tek Inc. et al.*, No. 2-07-cv-04788 (C.D. Cal.);
- *U.S. Philips Corporation et al. v. Wings Digital Corporation et al.*, No. 2-04-cv-02573 (E.D.N.Y.);
- *Koninklijke Philips Electronics N.V. et al. v. Advanced Digital Replication, Inc. et al.*, No. 7-07-cv-08166 (S.D.N.Y.);
- *Koninklijke Philips Electronics, NV et al. v. Access CardioSystems, Inc.*, No. 2-03-cv-01318 (W.D. Wash.);
- *Philips Solid-State Lighting Solutions, Inc. v. Lighting Science Group Corporation et al.*, No. 1-08-cv-10289 (D. Mass.);
- *Koninklijke Philips Electronics NV, et al. v. Cinram International Inc., et al.*, No. 7-08-cv-00515 (S.D.N.Y.);
- *Mitsubishi Electric Corporation et al. v. Target Corporation and Doe Corporations 1-10*, No. 7-08-cv-03689 (S.D.N.Y.);
- *Mitsubishi Electric Corp. et al. v. Vizio, Inc.*, No. 7-08-cv-05055 (S.D.N.Y.);
- *Koninklijke Philips Electronics, N.V. et al. v. Optical Experts et al.*, No. 7-08-cv-04071 (S.D.N.Y.);
- *Koninklijke Philips Electronics N.V. et al. v. Entertainment Distribution Company (USA) LLC et al.*, No. 7-08-cv-04070 (S.D.N.Y.);
- *Koninklijke Philips Electronics, N.V. v. Siemens Medical Solutions USA, Inc.*, No. 1-08-cv-02120 (N.D. Ohio);
- *Philips Solid-State Lighting Solutions, Inc. et al. v. Lighting Science Group Corporation et al.*, No. 1-08-cv-11650 (D. Mass.);

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- *Koninklijke Philips Electronics N.V. et al. v. EMI Group PLC et al.*, No. 7-08-cv-07351 (S.D.N.Y.);
- *Koninklijke Philips Electronics NV et al. v. L and M Optical Disc West LLC et al.*, No. 2-06-cv-03382 (C.D. Cal.);
- *Koninklijke Philips Electronics NV et al. v. O2 Optical Media Inc. et al.*, No. 2-06-cv-06382 (C.D. Cal.), subsequently transferred as No. 3-07-cv-00858 (N.D. Cal.);
- *Koninklijke Philips Electronics N.V. et al. v. Expedia Media, LLC et al.*, No. 7-06-cv-00934 (S.D.N.Y.);
- *Koninklijke Philips Electronics N.V. et al. v. HD Media, Inc. et al.*, No. 2-09-cv-01381 (C.D. Cal.);
- *Koninklijke Philips Electronics N.V. et al. v. Optical Disc Solutions, Inc. et al.*, No. 7-10-cv-01635 (S.D.N.Y.);
- *Koninklijke Philips Electronics N.V. et al. v. Pixelrange, Inc. et al.*, No. 1-10-cv-10494 (D. Mass.);
- *Koninklijke Philips Electronics N.V., et al. v. Zoll Medical Corporation*, No. 1-10-cv-11041 (D. Mass.);
- *Koninklijke Philips Electronics N.V. et al. v. Seoul Semiconductor Company Ltd. et al.*, No. 8-11-cv-00356 (C.D. Cal.);
- *Koninklijke Philips Electronics N.V. et al. v. Zoll Medical Corporation*, No. 2-12-cv-00018 (W.D. Wash.);
- *Koninklijke Philips Electronics NV et al. v. Nexxus Lighting, Inc.*, No. 1-12-cv-10549 (D. Mass.);
- *Koninklijke Philips Electronics NV, et al. v. National Film Laboratories, Inc., et al.*, No. 2-12-cv-04576 (C.D. Cal.);
- *Koninklijke Philips Electronics N.V. et al. v. The ADS Group et al.*, No. 7-08-cv-04068 (S.D.N.Y.);
- *Koninklijke Philips NV et al. v. Zoll Lifecor Corporation*, No. 2-12-cv-01369 (W.D. Penn.);
- *Koninklijke Philips Electronics NV et al. v. Aurora Lighting, Inc.*, No. 1-12-cv-12049 (D. Mass.);
- *Koninklijke Philips Electronics N.V. et al. v. Zoll Medical Corporation*, No. 1-12-cv-12255 (D. Mass.);
- *Koninklijke Philips NV et al. v. Digital Works, Inc. et al.*, No. 2-13-cv-01341 (D. Nev.);
- *Koninklijke Philips NV et al. v. Nintendo Co., Ltd. et al.*, No. 1-14-cv-00602 (D. Del.);

- *Koninklijke Philips NV et al. v. Schreder Lighting LLC et al.*, No. 1-14-cv-12282 (D. Mass.);
- *Koninklijke Philips NV et al. v. Wangs Alliance Corporation d/b/a WAC Lighting Co.*, No. 1-14-cv-12298 (D. Mass.);
- *Koninklijke Philips NV et al. v. JST Performance, Inc. d/b/a Rigid Industries*, No. 6-14-cv-01198 (M.D. Fla.);
- *Koninklijke Philips NV et al. v. JST Performance Inc.*, No. 2-14-cv-02591 (D. Ariz.);
- *Koninklijke Philips NV et al. v. Troy-CSL Lighting, Inc.*, No. 1-15-cv-11053 (D. Mass.);
- *Koninklijke Philips NV v. Iguzzini Lighting USA, Ltd. et al.*, No. 1-15-cv-03979 (S.D.N.Y.);
- *Koninklijke Philips NV et al. v. Amerlux, LLC et al.*, No. 1-15-cv-13086 (D. Mass.);
- *Koninklijke Philips NV et al. v. ASUSTek Computer Inc. et al.*, No. 1-15-cv-01125 (D. Del.);
- *Koninklijke Philips NV et al. v. HTC Corporation et al.*, No. 1-15-cv-01126 (D. Del.);
- *Koninklijke Philips NV et al. v. Visual Land Inc.*, No. 1-15-cv-01127 (D. Del.);
- *Koninklijke Philips NV et al. v. Southern Telecom, Inc.*, No. 1-15-cv-01128 (D. Del.);
- *Koninklijke Philips NV et al. v. Digital Products International, Inc.*, No. 1-15-cv-01129 (D. Del.);
- *Koninklijke Philips NV et al. v. Double Power Technology, Inc. et al.*, No. 1-15-cv-01130 (D. Del.);
- *Koninklijke Philips NV et al. v. Yifang USA Inc. d/b/a E-Fun, Inc.*, No. 1-15-cv-01131 (D. Del.);
- *Koninklijke Philips NV et al. v. Acer Inc. et al.*, No. 1-15-cv-01170 (D. Del.);
- *Koninklijke Philips N.V. et al. v. YiFang USA, Inc.*, No. 4-18-cv-01890 (N.D. Cal.);
- *Koninklijke Philips N.V. et al. v. ASUSTeK Computer Inc. et al.*, No. 4-18-cv-01886 (N.D. Cal.);
- *Koninklijke Philips N.V. et al. v. HTC Corp. et al.*, No. 4-18-cv-01887 (N.D. Cal.);

- *Koninklijke Philips N.V. et al. v. Visual Land, Inc.*, No. 4-18-cv-01888 (N.D. Cal.);
- *Koninklijke Philips N.V. et al. v. Double Power Technology, Inc. et al.*, No. 4-18-cv-01889 (N.D. Cal.);
- *Koninklijke Philips Electronics NV et al. v. Optical Experts Manufacturing, Inc, et al.*, No. 1-08-cv-00041 (E.D. Tex.);
- *Koninklijke Philips Electronics NV et al. v. Entertainment Distribution Company (USA) LLC et al.*, No. 1-08-cv-00042 (E.D. Tex.);
- *Koninklijke Philips Electronics NV et al. v. Advanced Duplication Services LLC et al.*, No. 1-08-cv-00043 (E.D. Tex.);
- *Koninklijke Philips NV et al. v. Tongfang Global Inc. et al.*, No. 2-19-cv-01366 (C.D. Cal.);
- *Koninklijke Philips NV f/k/a Koninklijke Philips Electronics NV v. QVC, Inc.*, No. 1-19-cv-01741 (D. Del.);
- *Koninklijke Philips NV f/k/a Koninklijke Philips Electronics NV v. Tectron International, Inc.*, No. 8-19-cv-01775 (C.D. Cal.);
- *Koninklijke Philips NV f/k/a Koninklijke Philips Electronics NV v. Maddamz Group, Inc. d/b/a Simple Living Products*, No. 8-19-cv-01776 (C.D. Cal.);
- *Koninklijke Philips NV et al. v. TTE Technology, Inc. d/b/a TCL USA et al.*, No. 2-20-cv-01406 (C.D. Cal.);
- *Koninklijke Philips NV f/k/a Koninklijke Philips Electronics NV et al. v. Dell Technologies Inc. et al.*, No. 1-20-cv-01240 (D. Del.);
- *Koninklijke Philips NV f/k/a Koninklijke Philips Electronics NV et al. v. HP Inc. f/k/a Hewlett-Packard Company*, No. 1-20-cv-01241 (D. Del.);
- *Koninklijke Philips NV f/k/a Koninklijke Philips Electronics NV et al. v. Lenovo Group Ltd. et al.*, No. 1-20-cv-01242 (D. Del.);
- *Koninklijke Philips NV f/k/a Koninklijke Philips Electronics NV et al. v. Intel Corporation*, No. 1-20-cv-01243 (D. Del.);
- *Koninklijke Philips NV f/k/a Koninklijke Philips Electronics NV et al. v. LG Electronics, Inc. et al.*, No. 1-20-cv-01244 (D. Del.);
- *Koninklijke Philips NV f/k/a Koninklijke Philips Electronics NV et al. v. MediaTek Inc. et al.*, No. 1-20-cv-01246 (D. Del.);
- *Koninklijke Philips NV f/k/a Koninklijke Philips Electronics NV et al. v. Realtek Semiconductor Corp.*, No. 1-20-cv-01247 (D. Del.);
- *Koninklijke Philips NV et al. v. Boston Scientific Corp.*, No. 1-20-cv-01487 (D. Del.);

- *Koninklijke Philips NV v. Telit Wireless Solutions Inc. et al.*, No. 1-20-cv-01708 (D. Del.);
- *Koninklijke Philips NV v. Thales DIS AIS USA, LLC et al.*, No. 1-20-cv-01713 (D. Del.);
- *Koninklijke Philips NV v. Quectel Wireless Solutions Co. Ltd.*, No. 1-20-cv-01707 (D. Del.);
- *Koninklijke Philips NV v. Thales DIS AIS USA LLC et al.*, No. 1-20-cv-01709 (D. Del.);
- *Koninklijke Philips NV v Quectel Wireless Solutions Co. Ltd. et al.*, No. 1-20-cv-01710 (D. Del.); and
- *Koninklijke Philips NV v. Telit Wireless Solutions, Inc. et al.*, No. 1-20-cv-01711 (D. Del.).

165. Similarly, Huawei, the former owner of the '579 patent, has asserted other patents against other parties, including at least:

- *Huawei Technologies Co. Ltd. v. T-Mobile US, Inc. et al.*, No. 2-16-cv-00052 (E.D. Tex.);
- *Huawei Technologies Co. Ltd. v. T-Mobile US, Inc. et al.*, No. 2-16-cv-00055 (E.D. Tex.);
- *Huawei Technologies Co. Ltd. v. T-Mobile US, Inc. et al.*, No. 2-16-cv-00056 (E.D. Tex.);
- *Huawei Technologies Co. Ltd. v. T-Mobile US, Inc. et al.*, No. 2-16-cv-00057 (E.D. Tex.);
- *Huawei Technologies Co., Ltd. et al. v. Samsung Electronics Co., Ltd. et al.*, No. 3-16-cv-02787 (N.D. Cal.);
- *Huawei Device USA Inc. et al. v. Harris Corporation*, No. 2-19-cv-00222 (E.D. Tex.);
- *Huawei Technologies Co., Ltd. v. L3Harris Technologies, Inc.*, No. 1-19-cv-01306 (D. Del.);
- *Huawei Technologies Co. Ltd. v. Verizon Communications, Inc. et al.*, No. 2-20-cv-00030 (E.D. Tex.); and
- *Huawei Technologies Co., Ltd et al. v. Verizon Communications, Inc. et al.*, No. 6-20-cv-00090 (W.D. Tex.).

166. The prior owners—including Philips and Huawei—did not deem the patents under Defendants' control in the Network-based Voice Messaging Patents Market to be worth the cost

of assertion. In particular, when Philips, IPG Electronics 503, and Pendragon Wireless owned the '252 patent, they never pursued infringement claims against Apple for functionality that then existed in Apple products and that Uniloc 2017 has later accused of infringement. Uniloc 2017 and Uniloc Licensing USA, LLC filed suit against Apple asserting the '252 patent on November 17, 2018. The Uniloc Defendants alleged infringement of the '252 patent in connection with "Apple's iMessage group audio capability, which is used by Apple's customers to send voice messages to multiple other parties, those devices including: iPhones, iPads, and iPod touch running iOS 5 or later and Mac products running OS X or later."[67] The accused iMessage functionality was introduced in October 2011. Given the six-year limitation on damages, the period from the issuance of the '252 patent on March 28, 2006 to November 2012 is one in which Apple paid no royalties for the '252 patent, royalties cannot be obtained from Apple for the '252 patent for that period, and Apple faced no assertion of the '252 patent. But, as described further below, after aggregation and the elimination of competition, Uniloc 2017 has demanded supracompetitive royalties from Apple and imposed on Apple the cost of defending the assertion of the '252 patent.

167. By contrast, the Uniloc Defendants, under Fortress's control and with the benefit of aggregation that eliminated competition, have pursued a litigation campaign based on these patents.

168. Specifically, Defendants Uniloc Luxembourg and Uniloc USA, both under the control of Fortress, began a litigation campaign in 2016 based on the '5890 patent, the '433 patent, the '723 patent, and the '622 patent, shortly after acquiring the patents from Empire IP. From 2016 to 2018, Uniloc Luxembourg and Uniloc USA asserted at least one, but often multiple, of these patents in 40 lawsuits:

- *Uniloc USA, Inc. et al. v. Amazon.com, Inc. et al.*, No. 2:18-cv-00289 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Kik Interactive, Inc.*, No. 2:17-cv-00481 (E.D. Tex.);

[67] *Uniloc 2017 LLC et al. v Apple Inc.*, No. 1:18-cv-00991 (W.D. Tex. Nov. 17, 2018), Dkt. 1 ¶ 8.

REDACTED VERSION OF DOCUMENT SOUGHT TO BE SEALED

- *Uniloc USA, Inc. et al. v. Hike Ltd.*, No. 2:17-cv-00475 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Google Inc.*, No. 2:17-cv-00465 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Google Inc.*, No. 2:17-cv-00466 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Google Inc.*, No. 2:17-cv-00467 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Kik Interactive, Inc.*, No. 2:17-cv-00347 (E.D. Tex.), subsequently consolidated as No. 2:17-cv-00346 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Hike Ltd.*, No. 2:17-cv-00349 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Google, LLC*, No. 2:17-cv-00231 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Google Inc.*, No. 2:17-cv-00224 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Google, LLC*, No. 2:17-cv-00214 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. HeyWire, Inc.*, No. 2:16-cv-01313 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. HTC America, Inc.*, No. 2:16-cv-00989 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Kyocera America, Inc. et al.*, No. 2:16-cv-00990 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. LG Electronics USA, Inc.*, No. 2:16-cv-00991 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Motorola Mobility LLC*, No. 2:16-cv-00992 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. ZTE (USA) Inc. et al.*, No. 2:16-cv-00993 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Huawei Device USA, Inc. et al.*, No. 2:16-cv-00994 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Telegram Messenger, LLP*, No. 2:16-cv-00892 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Vonage Holdings Corp. et al.*, No. 2:16-cv-00893 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Avaya Inc.*, No. 2:16-cv-00777 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. ShoreTel, Inc.*, No. 2:16-cv-00779 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. AOL Inc.*, No. 2:16-cv-00722 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. BeeTalk Private Ltd.*, No. 2:16-cv-00725 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Facebook, Inc.*, No. 2:16-cv-00728 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Green Tomato Limited*, No. 2:16-cv-00731 (E.D.

Tex.);

- *Uniloc USA, Inc. et al. v. Sony Interactive Entertainment LLC*, No. 2:16-cv-00732 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. TangoMe, Inc. d/b/a Tango*, No. 2:16-cv-00733 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Tencent America, LLC et al.*, No. 2:16-cv-00694 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Snap Inc.*, No. 2:16-cv-00696 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Apple Inc.*, No. 2:16-cv-00638 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. BlackBerry Corporation et al.*, No. 2:16-cv-00639 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Kakao Corporation*, No. 2:16-cv-00640 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Line Euro-Americas Corp. et al.*, No. 2:16-cv-00641 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Samsung Electronics America, Inc.*, No. 2:16-cv-00642 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Viber Media Sarl*, No. 2:16-cv-00643 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. VoxerNet LLC*, No. 2:16-cv-00644 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. WhatsApp, Inc.*, No. 2:16-cv-00645 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Tencent America*, LLC et al., No. 2:16-cv-00577 (E.D. Tex.); and
- *Uniloc USA, Inc. et al. v. Amazon.com, Inc. et al.*, No. 2:18-cv-00290 (E.D. Tex.).

169. Of the 40 suits based on these patents, at least ten resulted in settlements after nine defendants capitulated to Uniloc's demands:

- *Uniloc USA, Inc. et al. v. Hike Ltd.*, No. 2:17-cv-00475 (E.D. Tex.), and *Uniloc USA, Inc. et al. v. Hike Ltd.*, No. 2:17-cv-00349 (E.D. Tex.), were dismissed pursuant to a settlement in April 2019;
- *Uniloc USA, Inc. et al. v. Kyocera America, Inc. et al.*, No. 2:16-cv-00990 (E.D. Tex.), was dismissed pursuant to a settlement in June 2017;
- *Uniloc USA, Inc. et al. v. Huawei Device USA, Inc. et al.*, No. 2:16-cv-00994 (E.D. Tex.), was dismissed pursuant to a settlement in July 2019;
- *Uniloc USA, Inc. et al. v. AOL Inc.*, No. 2:16-cv-00722 (E.D. Tex.), was

dismissed pursuant to a settlement in August 2017;

- *Uniloc USA, Inc. et al. v. TangoMe, Inc. d/b/a Tango*, No. 2:16-cv-00733 (E.D. Tex.), was dismissed pursuant to a settlement in January 2017;
- *Uniloc USA, Inc. et al. v. BlackBerry Corporation et al.*, No. 2:16-cv-00639 (E.D. Tex.), was dismissed pursuant to a settlement in July 2017;
- *Uniloc USA, Inc. et al. v. Samsung Electronics America, Inc.*, No. 2:16-cv-00642 (E.D. Tex.), was dismissed pursuant to a settlement in May 2020;
- *Uniloc USA, Inc. et al. v. Viber Media S.a.r.l.*, No. 2:16-cv-00643 (E.D. Tex.), was dismissed pursuant to a settlement in January 2017; and
- *Uniloc USA, Inc. et al. v. VoxerNet LLC*, No. 2:16-cv-00644 (E.D. Tex.), was dismissed pursuant to a settlement in December 2016.

The details of these settlements are not publicly available. But Uniloc Luxembourg, which attributed most of its revenue to litigation, generated $7.3 million for the fiscal year that ended June 30, 2016, and $14.6 million for the fiscal year that ended June 30, 2017—years in which certain of these settlements were reached.

170. Of the 30 suits that were not resolved with case filings expressly referencing a settlement, ten were dismissed with prejudice (possibly indicating settlements), and one was dismissed without prejudice. The remaining nineteen cases were stayed pending *inter partes* review.

171. Defendant Uniloc 2017, under Fortress's control, began a similar litigation campaign in 2018 based on the '252 patent and the '622 patent. During 2018 and 2019, Defendant Uniloc 2017 asserted either the '252 patent or the '622 patent in six lawsuits:

- *Uniloc 2017 LLC et al. v. Microsoft Corporation*, No. 8:18-cv-01320 (C.D. Cal.);
- *Uniloc 2017 LLC et al. v. Hike Ltd. et al.*, No. 2:18-cv-00417 (E.D. Tex.);
- *Uniloc 2017 LLC et al. v. Apple Inc.*, No. 1:18-cv-00907 (W.D. Tex.), subsequently refiled as No. 1:18-cv-00991 (W.D. Tex.), subsequently transferred as No. 5:19-cv-01929 (N.D. Cal.) (EJD);
- *Uniloc 2017 LLC v. Microsoft Corp.*, No. 8:18-cv-02054 (C.D. Cal.);
- *Uniloc 2017 LLC v. Hike Ltd. et al.*, No. 2:18-cv-00515 (E.D. Tex.); and
- *Uniloc 2017 LLC v. Microsoft Corp.*, No. 8:19-cv-00780 (C.D. Cal.).

172. Of Uniloc 2017's six suits based on the '252 and '622 patents, at least two resulted in settlement: *Uniloc 2017 LLC et al. v. Hike Ltd. et al.*, No. 2:18-cv-00417 (E.D. Tex.) and *Uniloc 2017 LLC v. Hike Ltd. et al.*, No. 2:18-cv-00515 (E.D. Tex.) were dismissed pursuant to an April 2019 settlement. Details regarding the settlement are not publicly available.

173. Of the four suits that were not resolved with case filings expressly referencing a settlement, three were stayed pending *inter partes* review and one was dismissed without prejudice.

174. Apple has been injured by the elimination of competition resulting from Defendants' aggregation of patents in the Network-based Voice Messaging Patents Market. Specifically, by eliminating competition, this aggregation positioned Fortress and the Uniloc Defendants to seek supracompetitive royalties that the prior patent holders were unable to seek because of the competitive constraints they faced. Because it has refused to capitulate to exorbitant royalty demands, Apple has been injured by Fortress and the Uniloc Defendants having targeted Apple as part of their litigation campaigns based on these patents. Moreover, Apple and Intel have been injured as a result of the ongoing threat that Defendants will continue to assert patents in the Network-based Voting Messaging Patents Market against them.

175. On June 14, 2016, Defendants Uniloc Luxembourg and Uniloc USA sued Apple in the Eastern District of Texas, claiming that Apple's iOS and iMessage Tap to Talk Feature infringed the '5890 patent, the '723 patent, the '622 patent, and the '433 patent.[68] The case was

[68] *Uniloc USA, Inc. et al. v. Apple Inc.*, No. 2:16-cv-00638 (E.D. Tex.).

stayed pending *inter partes* review proceedings. Ultimately, the PTAB's Final Written Decisions declared all asserted claims of all asserted patents unpatentable.[69]

176. On October 22, 2018, Defendant Uniloc 2017 and Uniloc Licensing USA LLC ("Uniloc Licensing") sued Apple in the Western District of Texas, claiming that Apple's iMessage audio messaging feature infringed the '252 patent.[70] Less than one month later, on November 17, 2018, Defendant Uniloc 2017 and Uniloc Licensing voluntarily dismissed the case. That same day, Defendant Uniloc 2017 sued Apple in the same District, again claiming that Apple's iMessage audio messaging feature infringed the '252 patent. That case was transferred to the Northern District of California, where it is stayed pending resolution of *inter partes* review proceedings.

177. The Patent Local Rules for the Northern District of California require under Rule 3-8 that a party asserting infringement shall "[i]dentify each of the category(-ies) of damages it is seeking for the asserted infringement, as well as its theories of recovery, factual support for those theories, and computations of damages within each category." One court has described the obligation as requiring a patentee to provide a "reasonable good faith computation of damages."[71]

178. In its February 25, 2020 Rule 3-8 Damages Contentions, Defendant Uniloc 2017 provided that its estimated damages for Apple's alleged infringement of the '252 patent are $489,607,520. This demand far exceeds the $33.6 million paid by Fortress in March 2018 for the entire Uniloc Luxembourg portfolio (including the '252 patent). Further, this amount far exceeds

[69] *Apple Inc. v. Uniloc USA, Inc.*, IPR2017-00221, Paper No. 33 (PTAB May 23, 2018) (determining the asserted claims of the '5890 patent to be unpatentable); *Apple Inc. v. Uniloc Luxembourg S.A.*, IPR2017-00222, Paper No. 29 (PTAB May 23, 2018) (determining the asserted claims of the '723 patent to be unpatentable); *Facebook, Inc. v. Uniloc 2017 LLC*, IPR2017-01667, Paper No. 37 (PTAB Jan. 16, 2019) (determining the asserted claims of the '622 patent to be unpatentable); *Facebook, Inc. v. Uniloc 2017 LLC*, IPR2017-01668, Paper No. 35 (PTAB Jan. 16, 2019) (same); *Facebook, Inc. v. Uniloc 2017 LLC*, IPR2017-01427, Paper No. 46 (PTAB Nov. 30, 2018) (determining claims 1-8, among others, of the '433 patent to be unpatentable); *Facebook, Inc. v. Uniloc 2017 LLC*, IPR2017-01428, Paper No. 40 (PTAB Nov. 30, 2018) (same); *Samsung Elecs. v. Uniloc 2017 LLC*, IPR2017-01801, Paper No. 31 (PTAB Jan. 31, 2019) (determining claims 1-5 and 8, among others, of the '433 patent to be unpatentable).

[70] *Uniloc 2017 LLC et al v. Apple Inc.*, No. 1:18-cv-00907 (W.D. Tex.), subsequently refiled as No. 1:18-cv-00991 (W.D. Tex.), and subsequently transferred as 5:19-cv-01929 (N.D. Cal.).

[71] *Twilio, Inc. v. Telesign Corp.*, No. 16CV06925LHKSVK, 2017 WL 5525929, at *5 (N.D. Cal. Nov. 17, 2017).

the $6.25 million valuation of Uniloc Luxembourg's patent portfolio, at a time when Uniloc Luxembourg held the substitute '5890, '723, '622, and '433 patents. As substitute patents in the same relevant market as the '252 patent, the valuation of these patents based on their acquisition prices serves as a reliable proxy for the pre-aggregation value of the '252 patent. The value of the '252 patent had not changed in the interim, but what had changed was that the '252 patent was now aggregated under Fortress's control with other substitute patents as well as with complementary patents, providing Uniloc 2017 with the ability to pursue supracompetitive royalties. Further, by seeking such outsized damages, the Uniloc Defendants signal their belief that the '252 patent represents a patent of significant importance in this market such that it would enable them to extract such supracompetitive royalties.

179. Apple sought Uniloc's permission to disclose (under seal) information about the purchase price of the '252 patent and licenses granted by Uniloc for the '252 patent; however, Uniloc refused that consent and it opposed Apple's request to the court to modify the protective order in that case to allow the information to be used here.[72] The court refused Apple's request.[73] Uniloc's refusal and its opposition to Apple's request to the court for relief from the protective order support an inference that the information at issue would be helpful in showing a significant disparity between the terms on which Uniloc acquired the '252 patent and the damages it now seeks for that patent, and that Uniloc has been able to obtain supracompetitive royalties by licensing the '252 patent.

180. Uniloc's litigation demand is also far higher than market valuations for the complementary '579 patent. As a complementary patent in the same relevant market as the '252 patent, the purchase price of the '579 patent serves as a reliable proxy for the pre-aggregation value of the '252 patent. Inventergy acquired the '579 patent from Huawei for far less than Uniloc seeks in royalties, notwithstanding that a bare patent license provides far fewer rights than outright

[72] *Uniloc 2017 LLC et al. v. Apple Inc.*, No. 5:19-cv-01929 (N.D. Cal. Feb. 1, 2021) (EJD), Dkt. 107.

[73] *Uniloc 2017 LLC et al. v. Apple Inc.*, No. 5:19-cv-01929 (N.D. Cal. Feb. 12, 2021) (EJD), Dkt. 114.

ownership of a patent. As described above, Inventergy disclosed that it had acquired 740 patents from Nokia, Huawei, and Panasonic for up-front payments totaling $10 million with an obligation to make minimum payouts of $20 million. After acquiring the '579 patent, Inventergy's market capitalization was $15 million. Even assuming that all the value of Inventergy's acquisitions and of Inventergy as a company was attributable to just the '579 patent (and there is no reason to think that was the case), that amount—either $30 million in purchase costs or $15 million—would be a fraction of the demand that Uniloc has made.

181. In a July 22, 2020 Final Written Decision, the PTAB declared all asserted claims of the '252 patent unpatentable.[74]

182. The supracompetitive licensing royalties Fortress's PAEs seek and have obtained are direct evidence of Defendants' market power and the anticompetitive effects that have resulted from their anticompetitive patent aggregation scheme. For example, the Uniloc Defendants have been able to coerce several parties (including at least Hike Ltd., Kyocera America, Inc., Huawei Device USA, Inc., AOL Inc., TangoMe, Inc., Blackberry Corporation, Samsung Electronics America, Inc., Viber Media S.a.r.l., and VoxerNet LLC) to license its patents in the Network-based Voice Messaging Patents Market, even though the prior owners of the patents, owners with much experience in asserting patents, made no similar attempt to enforce the patents. Fortress (through its PAEs) has been able to acquire patents and then, through the benefit of its anticompetitive scheme, extract inflated royalties from licensees that reflect the elimination of competition from Defendants' patent aggregation and far exceeds the actual value of the patents based on their technical and commercial merits.

183. Defendants' demands also show that Fortress has the power to control prices in the Network-based Voice Messaging Patents Market. As detailed above, Fortress-backed entities have sought hundreds of millions of dollars from Apple.

[74] *Unified Patents LLC v. Uniloc 2017 LLC*, IPR2019-00453, Paper No. 38 (PTAB July 22, 2020).

B. Remote Software Updates

184. Fortress, the Uniloc Defendants, and Seven Networks have aggregated patents that purportedly cover techniques for identifying devices that are eligible for remote software updates. Remote software updates are how software programs that run on consumers' electronic devices can be updated through remote means (e.g., downloading and installing a software patch to fix a bug or updates for operating software) rather than, for example, the user needing to physically take an electronic device to a different location for new software installation. Remote software updates have become the commonplace means to provide software updates, including because they provide consumer convenience. One step in providing remote software updates involves identifying devices eligible for remote updates. There is no close substitute for techniques for identifying eligible devices.

185. Fortress, the Uniloc Defendants, and Seven Networks have aggregated patents in an antitrust market for patents for identification of devices that are eligible for remote software updates, the "Remote Software Updates Patents Market." The Remote Software Updates Patents Market constitutes a relevant antitrust market in which Fortress (either directly through its PAE subsidiaries or by acting in concert with the PAEs in which it invests) and other holders of patents claimed to read on electronic devices and/or programs that use techniques for identifying devices that are eligible for remote software updates compete with one another to license patents to suppliers of such devices and supporting software.

186. Among the substitute patents Defendants and Seven Networks have aggregated in the Remote Software Updates Patents Market are U.S. Patent No. 8,239,852, U.S. Patent No. 6,467,088, U.S. Patent No. 6,110,228, and U.S. Patent No. 8,078,158, all of which purport to cover alternative techniques for identifying devices that are eligible for remote software updates.

187. U.S. Patent No. 8,239,852 ("the '852 patent") is titled "Remote Update of Computers Based on Physical Device Recognition" and issued on August 7, 2012. According to its abstract, the '852 patent relates to "[a] system for remotely updating a program configuration [that] includes an update server in communication with a client device configured to execute a

remote update program." It claims methods for updating software remotely, including by using device identifiers to determine eligibility for software or configuration updates.

188. On its face, the '852 patent is assigned to Defendant Uniloc Luxembourg. On December 30, 2014, Defendant Uniloc Luxembourg conveyed a security interest in the '852 patent to Defendant Fortress Credit. On May 3, 2018, Defendant Uniloc Luxembourg assigned the '852 patent to Uniloc 2017.

189. U.S. Patent No. 6,467,088 ("the '088 patent") is titled "Reconfiguration Manager for Controlling Upgrades of Electronic Devices" and issued on October 15, 2002. According to its abstract, the '088 patent relates to "[a] reconfiguration manager implemented on a computer or other data processing device [that] controls the reconfiguration of software or other components of an electronic device such as a computer, personal digital assistant (PDA), set-top box, television, etc." Like the '852 patent, the '088 patent also purports to cover methods for updating software remotely, including by using device identifiers to determine eligibility for software or configuration updates. The '088 patent overlaps to such an extent with the '852 patent that, during prosecution of the application that led to the '852 patent, the patent examiner rejected draft claims in that application based on the '088 patent.

190. On its face, the '088 patent is assigned to Philips. On January 30, 2009, Philips assigned the '088 patent to IPG Electronics 503. On April 10, 2012, IPG Electronics 503 assigned the '088 patent to Pendragon Wireless. On January 31, 2018, Pendragon Wireless assigned the '088 patent to Defendant Uniloc Luxembourg (which was, by that time, under Fortress's control). On May 3, 2018, Defendant Uniloc Luxembourg assigned the '088 patent to Defendant Uniloc 2017.

191. U.S. Patent No. 6,110,228 ("the '228 patent") is titled "Method and Apparatus for Software Maintenance at Remote Nodes" and issued on August 29, 2000. According to its abstract, the '228 patent relates to "[a] computer network system [that] includes a central software service site that operates with a customer interface through which a customer at a remote location can request service and receive updated executable code back from the service site." It claims

methods for servicing software at a remote location, focusing on the customer interface for manually identifying the device requesting service from the remote location.

192. On its face, the '228 patent is assigned to International Business Machines Corporation ("IBM"). On February 17, 2017, IBM assigned the '228 patent to Defendant Uniloc Luxembourg (which was, by that time, beholden to Fortress), and the patent was thereby made subject to a December 30, 2014 security interest Defendant Uniloc Luxembourg and Defendant Uniloc USA had conveyed to Defendant Fortress Credit. On May 3, 2018, Defendant Uniloc Luxembourg assigned the '228 patent to Defendant Uniloc 2017.

193. U.S. Patent No. 8,078,158 ("the '158 patent") is titled "Provisioning Applications for a Mobile Device" and issued on December 13, 2011. According to its abstract, the '158 patent relates to "provisioning an application for a mobile device." Its claims describe techniques for provisioning a software application on a remote mobile device by providing configuration information to the user.

194. On its face, the '158 patent is assigned to Seven Networks, Inc. As noted above, Fortress converted Seven Networks Inc. to Seven Networks LLC in 2015.

195. Defendants' aggregation of patents in the Remote Software Updates Patents Market (including at least four substitute patents) has reduced competition in that market, leading to inflated royalties and decreased licensing output. Specifically, Defendants have asserted that the '852 patent covers a method of providing software updates where a "device identifier" is used to determine eligibility for an update. Defendants have also asserted that the '088 patent covers a method of providing software updates in which a list of acceptable and unacceptable configurations is used to determine eligibility for an update. Absent Defendants' unlawful aggregation, the use of a device identifier to determine eligibility for an update can be a substitute for the use of a configuration list, and vice versa. When the '852 and '088 patents were owned by different entities, a party wishing to use one of these potential substitute technologies would be able to take advantage of competition between the owners of these patents when attempting to

secure a license. But because of Defendants' unlawful aggregation of patent rights, Defendants now control both substitute technologies, making such competition impossible.

196. That lessening of competition is reflected by the evidence of supracompetitive royalties sought and received by Defendants following aggregation. The prior owners of the '088 patent (Philips, then Pendragon Wireless) and the '228 patent (IBM) never asserted these patents because they would not have been able to obtain royalties sufficient to justify the cost of assertion absent the market power created by the Fortress-led aggregation scheme and the resulting elimination of competition. Likewise, the prior owners would not have transferred the aggregated patents if they could have licensed the patents for the amounts that Defendants have either received or seek in litigation. Defendants have pursued numerous assertions of these patents and the substitute '852 patent and secured at least one settlement for substantial royalties.

197. As described above, Philips, the former assignee of the '088 patent, asserted many other patents over the years, indicating that it was capable and willing to do so in the appropriate circumstances. Likewise, IBM, the former assignee of the '228 patent, also asserted other patents over the years, including in at least the following cases:

- *International Business Machines Corporation v. Amazon.com, Inc.*, No. 6-06-cv-00452 (E.D. Tex.);
- *International Business Machines Corporation v. Amazon*, No. 9-06-cv-00242 (E.D. Tex.);
- *International Business Machines Corporation v. Fair Issac Corporation*, No. 1-05-cv-10296 (S.D.N.Y.), subsequently transferred as 0-06-cv-01277 (D. Minn.);
- *International Business Machines Corporation v. Compuware Corporation*, No. 7-04-cv-00357 (S.D.N.Y.);
- *International Business Machines Corporation v. The Priceline Group, Inc. et al.*, No. 1-15-cv-00137 (D. Del.);
- *International Business Machines Corporation v. Groupon, Inc.*, No. 1-16-cv-00122 (D. Del.);
- *International Business Machines Corporation v. Expedia, Inc. et al.*, No. 1-17-cv-01875 (D. Del.);

- *International Business Machines Corporation v. Expedia Inc. et al.*, No. 2-19-cv-02296 (D. Ariz.);
- *International Business Machines Corporation v. Zillow Group, Inc. et al.*, No. 8-19-cv-01777 (C.D. Cal.);
- *International Business Machines Corporation v. Airbnb, Inc.*, No. 1-20-cv-00351 (D. Del.);
- *International Business Machines Corporation v. Zillow Group Inc. et al.*, No. 2-20-cv-00851 (W.D. Wash.); and
- *International Business Machines Corporation v. Zillow Group, Inc. et al.*, No. 2-20-cv-01130 (W.D. Wash.).

198. In its 2017 annual report, IBM indicated that "[t]he company continues to actively seek IP protection for its innovations, while increasing emphasis on other initiatives designed to leverage its IP leadership. Some of IBM's technological breakthroughs are used exclusively in IBM products, while others are licensed and may be used in IBM products and/or the products of the licensee. As part of its business model, the company licenses certain of its intellectual property, which is high-value technology, but may be in more mature markets." Further, IBM indicated that "the company enforces its own IP against infringement, through license negotiations, lawsuits or otherwise."

199. The prior owners—including Philips and IBM—did not deem the '088 patent and the '228 patent worth asserting in litigation. By contrast, the Uniloc Defendants, under Fortress's control and with the benefit of aggregation, have pursued a litigation campaign based on these patents.

200. Specifically, Defendants Uniloc Luxembourg and Uniloc USA (under Fortress's control) began a litigation campaign in 2017 based on the '852 patent, the '088 patent, and the '228 patent shortly after acquiring the '228 patent from IBM. Between March 2017 and June 2018, Defendants Uniloc Luxembourg and Uniloc USA asserted one of these three patents in 14 lawsuits:

- *Uniloc USA, Inc. et al. v. Big Fish Games, Inc.*, No. 2:17-cv-00172 (E.D. Tex.), subsequently transferred as No. 2:17-cv-01183 (W.D. Wash.);
- *Uniloc USA, Inc. et al. v. Box, Inc.*, No. 2:17-cv-00173 (E.D. Tex.);

- *Uniloc USA, Inc. et al. v. Nutanix, Inc.*, No. 2:17-cv-00174 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Ubisoft, Inc.*, No. 2:17-cv-00175 (E.D. Tex.), subsequently transferred as No 4:18-cv-02646 (N.D. Cal.) (JSW);
- *Uniloc USA, Inc. et al. v. Zendesk, Inc.*, No. 2:17-cv-00176 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Riot Games, Inc.*, No. 2:17-cv-00275 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Nexon America, Inc.*, No. 2:17-cv-00276 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Square Enix, Inc.*, No. 2:17-cv-00302 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Kaspersky Lab, Inc.*, No. 2:17-cv-00305 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Infor, Inc.*, No. 2:17-cv-00370 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Box, Inc.*, No. 1:17-cv-00754 (W.D. Tex.), subsequently transferred as No. 4:18-cv-03364 (N.D. Cal.) (JSW);
- *Uniloc USA, Inc. et al. v. Infor, Inc.*, No. 3:17-cv-02119 (N.D. Tex.);
- *Uniloc USA, Inc. et al. v. Apple Inc.*, No. 2:17-cv-00258 (E.D. Tex), subsequently transferred as No. 5:18-cv-00357 (N.D. Cal) (LHK); and
- *Uniloc USA, Inc. et al. v. Apple Inc.*, No. 1:18-cv-00296 (W.D. Tex.).

201. Of the 14 lawsuits based on the ’852 patent, the ’088 patent, or the ’228 patent, at least one resulted in a settlement: *Uniloc USA, Inc. et al. v. Zendesk, Inc.*, No. 2:17-cv-00176 (E.D. Tex.) was dismissed pursuant to a settlement in August 2017. The details of the parties’ settlement agreement are not publicly available.

202. Of the thirteen suits that were not resolved with case filings expressly referencing a settlement, four were dismissed with prejudice (possibly indicating settlements), seven were dismissed without prejudice, one remains stayed pending appellate review of a related district court decision, and one remains active.

203. In July 2019, Defendant Uniloc 2017 (under Fortress’s control) started a similar litigation campaign based on the ’088 patent specifically. Defendant Uniloc 2017 has asserted the ’088 patent in two lawsuits:

- *Uniloc 2017 LLC v. Microsoft Corp.*, No. 8:19-cv-00956 (C.D. Cal.); and
- *Uniloc 2017 LLC v. Apple Inc.*, No. 6:19-cv-00532 (W.D. Tex.).

204. Defendant Uniloc 2017's action against Microsoft Corporation was stayed pending *inter partes* review proceedings.

205. In May 2017, Seven Networks (under Fortress's control) also filed a lawsuit based on a patent—the '158 patent—in the Remote Software Updates Patents Market. Seven Networks sued Google in the Eastern District of Texas, alleging that the Google Play Store infringes the '158 patent.[75] In response, Google filed an action for declaratory judgment in the Northern District of California, seeking, among other declarations, a declaration that the Google Play Store does not infringe the '158 patent.[76] Ultimately, both actions ended with settlements between Seven Networks and Google.

206. Apple has been injured by the elimination of competition resulting from Defendants' aggregation of patents in the Remote Software Updates Patents Market. Specifically, this aggregation positioned Fortress and the Uniloc Defendants to seek supracompetitive royalties that the prior patent holders were unable to seek because of the competitive constraints they faced. Because it has refused to capitulate to exorbitant royalty demands, Apple has been injured by Fortress and the Uniloc Defendants having targeted Apple as part of their litigation campaigns based on these patents. Moreover, Apple and Intel have been injured as a result of the ongoing threat that Defendants will continue to assert patents in the Remote Software Updates Patents Market against them.

207. In April 2017, Defendants Uniloc USA and Uniloc Luxembourg sued Apple, alleging that Apple has infringed the '852 patent by making and selling software and devices that provide for receiving updates from Apple.[77] Defendants Uniloc USA and Uniloc Luxembourg also accused Apple of infringing two additional patents. The case was transferred to the Northern District of California, where the case was stayed pending *inter partes* review proceedings. After

[75] *Seven Networks, LLC v. Google LLC*, No. 2:17-cv-00442 (E.D. Tex. May 17, 2017).
[76] *Google LLC v. Seven Networks, LLC*, No. 3:17-cv-04600 (N.D. Cal. Aug. 10, 2017) (WHO).
[77] *Uniloc USA, Inc. et al. v. Apple Inc.*, No. 2:17-cv-00258 (E.D. Tex. Apr. 3, 2017), subsequently transferred as 5:18-cv-00357 (N.D. Cal.) (LHK).

inter partes review proceedings, followed by an appeal to the United States Court of Appeals for the Federal Circuit, the case resumed.

208. In their March 19, 2018 Rule 3-8 Damages Contentions for the '852 patent, Uniloc USA and Uniloc Luxembourg provided that based on their "current knowledge, understanding, and belief as to the facts and information available to them as of the date of these Contentions, Plaintiffs identify the following categories of damages that they are seeking" and indicated that damages for Apple's infringement of the '852 patent are between $756,709,869 and $1,475,852,582.[78] This demand far exceeds the $33.6 million paid by Fortress in March 2018 for the entire Uniloc Luxembourg portfolio (including the '852 patent). Further, this amount far exceeds the $6.25 million valuation of Uniloc Luxembourg's patent portfolio, at a time when Uniloc Luxembourg held the '852 patent. The value of the '852 patent had not changed in the interim, but what had changed was that the '852 patent was now aggregated under Fortress's control with other substitute patents as well as with complementary patents, providing Uniloc 2017 with the ability to pursue supracompetitive royalties. By seeking such outsized damages, the Uniloc Defendants signal their belief that the '852 patent represents a patent of significant importance in this market such that it would enable them to extract such supracompetitive royalties.

209. In April 2018, Defendants Uniloc Luxembourg and Uniloc USA sued Apple in the Western District of Texas, alleging that Apple devices that run iOS operating systems, including iPhones, iPads, iPods, the App Store, and associated servers implementing iOS update functionality, infringe the '088 patent.[79] In July 2018, Defendants Uniloc Luxembourg and Uniloc USA voluntarily dismissed the case without prejudice. Just over one year later, in September 2019, Defendant Uniloc 2017 sued Apple in the Western District of Texas, again alleging that Apple devices infringe the '088 patent.[80]

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[78] Defendant Uniloc 2017 stepped into the shoes of Defendant Uniloc Luxembourg and Defendant Uniloc USA after the '852 patent was transferred to Uniloc 2017.
[79] *Uniloc USA, Inc. et al. v. Apple Inc.*, No. 1:18-cv-00296 (W.D. Tex. Apr. 9, 2018).
[80] *Uniloc 2017 LLC v. Apple Inc.*, No. 6:19-cv-00532 (W.D. Tex. Sept. 20, 2019).

210. The supracompetitive licensing royalties Fortress's PAEs have sought and obtained are direct evidence of Defendants' market power and the anticompetitive effects that have resulted from their anticompetitive patent aggregation scheme. For example, the Uniloc Defendants and Seven Networks have been able to coerce at least Zendesk, Inc. and Google to license its patents in the Remote Software Updates Patents Market, even though the prior owners of the patents, owners with much experience in asserting patents, made no similar attempt to enforce the patents because of the competitive constraints they faced. Fortress (through its PAEs) has been able to acquire patents and then, through the benefit of its anticompetitive scheme, extract inflated royalties from licensees that reflect the competition that has been eliminated through Defendants' patent aggregation and far exceeds the actual value of the patents based on their technical and commercial merits.

211. Defendants' demands also show that Fortress has the power to control prices in the Remote Software Updates Patents Market. As detailed above, Fortress-backed entities have sought in excess of a billion dollars from Apple.

C. Mobile Device-to-Device Communication Through a Network-Coupled Intermediary Device

212. Fortress, the Uniloc Defendants, Seven Networks, and IXI IP have aggregated patents relating to mobile device-to-device communication through a network-coupled intermediary device. Mobile device-to-device communication techniques enable two or more mobile devices to communicate over a network efficiently and securely. This is a common feature that many electronic devices, such as smartphones, incorporate. Device-to-device communication can occur over specific types or arrangements of communication networks. Examples can include Internet-based communications, direct wireless communications using protocols like Bluetooth, wired communication using protocols like Ethernet, or combinations of these arrangements. One such specific technique of device-to-device communication is to use a network-coupled intermediary device to enable the mobile device, once connected to the network-coupled intermediary device, to communicate with other devices over the network through the intermediary

device. In this specific technique, the intermediary device has access to a network that the mobile device would not otherwise be able to access. For example, a mobile device may lack native access to a wired telephone network. Once connected to the network, the mobile device is able to communicates with other devices over the network as if it had native access. Such communications between devices through a network-coupled intermediary device are distinguished from two devices communicating directly with each other without a network-coupled intermediary device, e.g., two devices communicating directly through Bluetooth, or two devices communicating over networks to which they each have native access. But in the case of direct device-to-device communications, there are limitations on communications, such as requiring physical proximity between the devices or requiring that each device has native access to the same network, that are avoided by using a network-coupled intermediary device.

213. Defendants and Seven Networks have aggregated patents in an antitrust market for patents purporting to cover mobile device-to-device communication through a network-coupled intermediary device capabilities, the "Mobile Device-to-Device Communication Through a Network-Coupled Intermediary Device Patents Market." There is no close substitute for this functionality in electronic devices. The Mobile Device-to-Device Communication Through a Network-Coupled Intermediary Device Patents Market constitutes a relevant antitrust market where Fortress (either directly through its PAE subsidiaries or by acting in concert with the PAEs in which it invests) and other holders of patents claimed to read on electronic devices that support mobile device-to-device communication through a network-coupled intermediary device compete with one another to license patents to suppliers of such devices and supporting software.

214. Among the substitute patents Defendants have aggregated in the Mobile Device-to-Device Communication Through a Network-Coupled Intermediary Device Patents Market are U.S. Patent No. 6,446,127, U.S. Patent No. 6,161,134, U.S. Patent No. 7,299,008, U.S. Patent No. 6,845,097, U.S. Patent No. 7,551,593, and U.S. Patent No. 9,712,986, all of which purport to cover alternative techniques to establish communication between multiple devices through a network-coupled intermediary device.

215. U.S. Patent No. 6,446,127 ("the '127 patent") is titled "System and Method for Providing User Mobility Services on a Telephony Network" and issued on September 3, 2002. According to its abstract, the '127 patent relates to "[a] system and method for providing user mobility services on a data network telephony system." The '127 patent is directed to a technique for synchronizing user identification information contained on a mobile device with a network-connected device. Once synchronized, the mobile device can communicate over the network with other devices via the intermediary network-connected device.

216. On its face, the '127 patent is assigned to 3Com Corporation ("3Com Corp."). On April 28, 2010, in connection with a merger, 3Com Corp. assigned the '127 patent to Hewlett-Packard Company ("HP"). Effective October 10, 2011, HP assigned the '127 patent to Hewlett-Packard Development Company, L.P. ("HP Development"), and on October 27, 2015, HP Development assigned the '127 patent to Hewlett Packard Enterprise Development LP ("HP Enterprise Development"). On May 16, 2017, HP Enterprise Development assigned the '127 patent to Uniloc Luxembourg. On May 3, 2018, Uniloc Luxembourg assigned the '127 patent to Uniloc 2017.

217. U.S. Patent No. 6,161,134 ("the '134 patent") is titled "Method, Apparatus and Communications System for Companion Information and Network Appliances" and issued on December 12, 2000. According to its abstract, the '134 patent relates to "an information appliance and a network appliance (or telephone) that function independently as well as with each other as companion appliances." The '134 patent is directed to a technique for substituting a device identifier of a first device with a device identifier of a second device connected to the first device. Substituting the device identifier enables the second device to communicate with other devices using the first device as an intermediary.

218. On its face, the '134 patent is assigned to 3Com Corp. It has the same assignment history as the '127 patent: On April 28, 2010, in connection with a merger, 3Com Corp. assigned the '134 patent to HP. Effective October 10, 2011, HP assigned the '134 patent to HP Development. On October 27, 2015, HP Development assigned the '134 patent to HP Enterprise.

On May 16, 2017, HP Enterprise assigned the '134 patent to Uniloc Luxembourg, and on May 3, 2018, Uniloc Luxembourg assigned the '134 patent to Uniloc 2017.

219. U.S. Patent No. 7,299,008 ("the '008 patent") is titled "Call Management System and Method for Servicing Multiple Wireless Communication Devices" and issued on November 20, 2007. According to its abstract, the '008 patent relates to "[a] method for establishing a wireless communication interface between a call management device and a plurality of mobile communication devices." The '008 patent is directed to techniques for establishing a wireless communication interface between a call management device and a plurality of mobile communication devices. Once the wireless communication interface is established, the mobile communication devices can communicate with other devices via the intermediary call management device.

220. On its face, the '008 patent is assigned to IXI Mobile, Ltd. On June 5, 2014, IXI R&D assigned the '008 patent to Defendant IXI IP, and IXI IP conveyed a security interest in the '008 patent to Fortress Credit. On September 11, 2014, Fortress Credit conveyed its security interest in the '008 patent to FCO V CLO Transferor LLC, a Fortress affiliate.

221. U.S. Patent No. 6,845,097 ("the '097 patent") and U.S. Patent No. 7,551,593 ("the '593 patent") are in the same patent family; are titled "Device, System, Method and Computer Readable Medium for Pairing of Devices in a Short Distance Wireless Network"; and issued on January 18, 2005 and June 23, 2009, respectively. Their abstracts indicate that the '097 patent and the '593 patent relate to "[a] device, a system, a method and a computer readable medium allowing a user to efficiently and easily add/remove or pair a processing device to a short distance wireless network." The '097 patent and the '593 patent are directed to techniques for automatically pairing devices to form a short distance wireless network. More specifically, the patents explain that a Bluetooth enabled device can be paired to a cellular telephone, which enables the Bluetooth enabled device to communicate over a cellular network using the cellular telephone as an intermediary.

222. The patent assignment histories for the '097 patent and the '593 patent are the same. Both are assigned to IXI R&D on their face. On June 5, 2014, IXI R&D assigned them both to Defendant IXI IP, and IXI IP conveyed a security interest to Fortress Credit. On September 11, 2014, Fortress Credit conveyed its security interest in the '097 patent and the '593 patent to FCO V CLO Transferor LLC, a Fortress affiliate.

223. U.S. Patent No. 9,712,986 ("the '986 patent") is titled "Mobile Device Configured for Communicating with Another Mobile Device Associated with an Associated User" and issued on July 18, 2017. According to its abstract, the '986 patent relates to "[a] mobile virtual network operator [that] is disclosed as an entity that provides a mobile networking service to a user, the mobile networking service being provided using a physical mobile network provided by a third party." The '986 patent is directed to multiple devices receiving coordinated services from a particular service provider (e.g., app developer). More specifically, connecting multiple devices using the mobile networking service as an intermediary ensures that content is exchanged in an integrated manner.

224. On its face, the '986 patent is assigned to Seven Networks, Inc. As noted above, Fortress converted Seven Networks Inc. to Seven Networks LLC in 2015.

225. In addition to the patents discussed immediately above, which are substitutes for one another, Defendants Uniloc 2017 and Seven Networks have obtained additional patents relating to mobile device-to-device communication through a network-coupled intermediary device that are complements to, and possibly substitutes for, the '127 patent, the '134 patent, the '008 patent, the '097 patent, the '593 patent, and the '986 patent.

226. U.S. Patent No. 7,136,999 ("the '999 patent") is titled "Method and System for Electronic Device Authentication" and issued on November 14, 2006. According to its abstract, the '999 patent relates to "[e]lectronic devices [that] are authenticated to each other initially over a short-range wireless link." The '999 patent is directed to methods that allow two devices that might normally communicate only using short-range methods (e.g., Bluetooth) to communicate even if they are not in range of each other.

227. On its face, the '999 patent is assigned to Philips. On March 3, 2009, Philips Electronics North America Corporation ("Philips Electronics") assigned the '999 patent to IPG Electronics 503. On April 10, 2012, IPG Electronics 503 assigned the '999 patent to Pendragon Wireless. On January 31, 2018, Pendragon Wireless assigned the '999 patent to Defendant Uniloc Luxembourg. On May 3, 2018, Defendant Uniloc Luxembourg assigned the '999 patent to Defendant Uniloc 2017.

228. U.S. Patent No. 8,018,877 ("the '877 patent") is titled "Mobile Conferencing Method and System" and issued on September 13, 2011. According to its abstract, the '877 patent relates to "[a] server-based architecture for mobile conferencing." The '877 patent is directed to particular methods of exchanging data between mobile devices, including allocating a network address and server port to a mobile device, sending the network address and the server port to the mobile device, and exchanging data with the mobile device.

229. On its face, the '877 patent is assigned to inventor Daniel Lin. On April 27, 2012, inventor Daniel Lin assigned the '877 patent to Pendragon Wireless. On January 31, 2018, Pendragon Wireless assigned the '877 patent to Defendant Uniloc Luxembourg. On May 3, 2018, Defendant Uniloc Luxembourg assigned the '877 patent to Defendant Uniloc 2017.

230. U.S. Patent No. 9,769,176 ("the '176 patent") is titled "Multiple Data Store Authentication" and issued on September 19, 2017. According to its abstract, the '176 patent relates to "authenticating access to multiple data stores substantially in real-time." The '176 patent is directed to systems and methods for registering a client device and sharing data between the client device and a data store.

231. On its face, the '176 patent is assigned to Seven Networks.

232. Defendants' and Seven Networks' aggregation of patents (including at least six substitute patents and three complementary and/or substitute patents) in the Mobile Device-to-Device Communication Through a Network-Coupled Intermediary Device Patents Market has reduced competition in that market, leading to inflated royalties and decreased licensing output. For example, Defendants have asserted that the '008 patent covers a method of establishing a

wireless communications interface between a call management device and a plurality of mobile communication devices. Defendants have also asserted that the '127 and '134 patents cover methods of establishing a communications interface between a call management device (personal information device) and a single communications device. Using "one to many" can be a substitute for using "one to one" call management architecture, and vice versa. When the '008 patent and '127/'134 patents were owned by different entities, a party wishing to license a solution for mobile device-to-device communications through a network-coupled intermediary device would be able to take advantage of competition between the owners of these patents when attempting to secure a license. But because of Defendants' unlawful aggregation of patents, Defendants now control both substitute technologies, eliminating such competition.

233. That lessening of competition is reflected by the evidence of supracompetitive royalties sought and received by Defendants following the aggregations. The prior owners of the '127 patent (3Com Corp., then HP) and the '134 patent (3Com Corp., then HP) never asserted these patents because they would not have been able to obtain royalties sufficient to justify the cost of assertion absent the market power created by the Fortress-led aggregation scheme and the resulting elimination of competition. Likewise, the prior owners would not have transferred the aggregated patents if they could have licensed the patents for the amounts that Defendants have either received or seek in litigation. The Uniloc Defendants have pursued numerous assertions and secured at least one settlement for substantial royalties.

234. HP, one of the former assignees of the '127 patent and the '134 patent, has asserted other patents against a variety of defendants over the years, indicating that it was capable and willing to do so in the appropriate circumstances. Those cases include at least the following:

- *Hewlett-Packard Company v. Acer, Incorporated et al.*, No. 2-07-cv-00103 (E.D. Tex.);
- *Hewlett-Packard Company v. Acer, Incorporated et al.*, No. 2-07-cv-00150 (E.D. Tex.);
- *Hewlett-Packard Company v. Lexjet Corporation et al.*, No. 5-08-cv-02596 (N.D. Cal.);

- *Hewlett-Packard, et al. v. Gateway Inc.*, No. 3-04-cv-00613 (S.D. Cal.);
- *Hewlett-Packard Company v. Intergraph Corporation*, No. 2-04-cv-00154 (E.D. Tex.);
- *Hewlett-Packard Company v. Intergraph Corporation*, No. 6-04-cv-00374 (E.D. Tex.);
- *Hewlett-Packard Company v. Intergraph Corporation*, No. 3-03-cv-02517 (N.D. Cal.);
- *Hewlett-Packard Company v. EMC Corporation et al.*, No. 5-02-cv-04709 (N.D. Cal.);
- *Hewlett Packard Company v. Zhuhai Gree Magneto-Electric Co. Ltd. et al.*, No. 2-09-cv-06929 (C.D. Cal.);
- *Hewlett Packard Company v. Microjet Technology Co. Ltd. et al.*, No. 3-10-cv-00965 (N.D. Cal.);
- *Hewlett-Packard Company et al. v. Microjet Technology Co., Ltd. et al.*, No. 3-10-cv-02175 (N.D. Cal.);
- *Hewlett-Packard Company v. Microjet Technology Co.*, No. 2-01-cv-00060 (D. Nev.);
- *Hewlett-Packard Co. v. Pitney Bowes Inc.*, No. 1-01-cv-00132 (D. Idaho);
- *Hewlett-Packard Co. v. Pitney Bowes, Inc.*, No. 1-01-cv-00211 (W.D. Tex.);
- *Hewlett-Packard Company v. Pitney Bowes Inc.*, No. 5-01-cv-20413 (N.D. Cal.);
- *Hewlett-Packard Company v. ServiceNow, Inc.*, No. 5-14-cv-00570 (N.D. Cal.); and
- *Hewlett-Packard Company v. Ninestar Image Tech Limited et al.*, No. 4-14-cv-04473 (N.D. Cal.).

235. Likewise, HP Development, also a former assignee of the '127 and '134 patents, asserted other patents, including at least:

- *Hewlett-Packard, et al. v. Gateway Inc.*, No. 3-04-cv-00613 (S.D. Cal.);
- *Hewlett-Packard Development Company, LP v. Emachines, Inc.*, No. 3-04-cv-00789 (W.D. Wis.);
- *Hewlett-Packard Development Company v. Emachines Inc.*, No. 4-05-cv-00778 (S.D. Tex.); and
- *Hewlett-Packard Company et al. v. Microjet Technology Co., Ltd. et al.*, No. 3-10-cv-02175 (N.D. Cal.).

236. Thus, despite a willingness to engage in patent litigation, the prior owners did not deem the patents under Defendants' control in the Mobile Device-to-Device Communication Through a Network-Coupled Intermediary Device Patents Market to be worth the cost of assertion. By contrast, the Uniloc Defendants, under Fortress's control and with the benefit of aggregation, have pursued a litigation campaign based on these patents.

237. The Uniloc Defendants began a litigation campaign in 2018 based on these patents. Between February 2018 and April 2019, the Uniloc Defendants asserted at least one of the '999 patent and the '877 patent in three lawsuits:

- *Uniloc USA, Inc. et al. v. Apple Inc.*, No. 1:18-cv-00166 (W.D. Tex.), subsequently transferred as No. 4:19-cv-01696 (N.D. Cal.) (YGR);
- *Uniloc 2017 LLC et al. v. Apple Inc.*, No. 1:18-cv-00838 (W.D. Tex.), subsequently refiled as No. 1:18-cv-00990 (W.D. Tex.), subsequently transferred as No. 3:19-cv-01904 (N.D. Cal.) (WHO); and
- *Uniloc 2017 LLC v. Samsung Electronics America, Inc. et al.*, No. 2:19-cv-00126 (E.D. Tex.).

238. Of the three lawsuits based on these patents, at least one resulted in a settlement: *Uniloc 2017 LLC v. Samsung Electronics America, Inc. et al.*, No. 2:19-cv-00126 (E.D. Tex.) was dismissed pursuant to a settlement in May 2020. The details of the parties' settlement are not publicly available.

239. The Uniloc Defendants, under the control of Fortress, have also asserted the '127 and '134 patents against Apple in *Uniloc USA, Inc. v. Apple Inc.*, No. 2:17-cv-00535 (E.D. Tex. July 12, 2017), subsequently transferred as No. 3:18-cv-00572 (N.D. Cal.).

240. Seven Networks, under the control of Fortress, has also sought to enforce the '986 patent and the '176 patent in *Seven Networks, LLC v. Apple Inc.*, No. 2:19-cv-00115 (E.D. Tex.).

241. Apple has been injured by the elimination of competition resulting from Defendants' aggregation of patents in the Mobile Device-to-Device Communication Through a Network-Coupled Intermediary Device Patents Market. Specifically, by eliminating competition, this aggregation positioned Defendants to seek supracompetitive royalties that the prior patent

holders were unable to seek because of the competitive constraints they faced. Because it has refused to capitulate to exorbitant royalty demands, Apple has been injured by Fortress and the Uniloc Defendants having targeted Apple as part of their litigation campaign based on these patents. Moreover, Apple and Intel have been injured as a result of the ongoing threat that Defendants will continue to assert patents in the Mobile Device-to-Device Communication Through a Network-Coupled Intermediary Device Patents Market against them.

242. Specifically, on February 22, 2018, Defendants Uniloc Luxembourg and Uniloc USA sued Apple in the Western District of Texas, alleging that devices that use Apple's Push Notification service infringe the '877 patent.[81] Defendants Uniloc Luxembourg and Uniloc USA also alleged infringement of three additional patents. The case was transferred to the Northern District of California, where Defendants Uniloc Luxembourg and Uniloc USA voluntarily dismissed the case two weeks after Apple filed a motion to dismiss.

243. On October 3, 2018, Defendant Uniloc 2017 and Uniloc Licensing USA sued Apple in the Western District of Texas, alleging that devices that use Apple's AirDrop feature infringe the '999 patent.[82] Less than seven weeks later, Defendant Uniloc 2017 and Uniloc Licensing USA voluntarily dismissed that case and, the same day, Defendant Uniloc 2017 refiled the lawsuit as a new case in the same District. The case was transferred to the Northern District of California, where the case is stayed pending *inter partes* review proceedings. Pursuant to Local Rule 3-8, Defendant Uniloc 2017 provided in its November 4, 2019 damages contentions that "based on Uniloc's current knowledge, understanding, and belief as to the facts and information available to it as of the date of these Damages Contentions, Uniloc identifies the following categories of damages that it is requesting be awarded in this case" and indicated that it seeks damages for Apple's alleged infringement of the '999 patent of at least $162,240,692.

[81] *Uniloc USA, Inc. et al. v. Apple Inc.*, No. 1:18-cv-00166 (W.D. Tex. Feb. 22, 2018), subsequently transferred as 4:19-cv-01696 (N.D. Cal.) (YGR).

[82] *Uniloc 2017 LLC et al. v. Apple Inc.*, No. 1:18-cv-00838 (W.D. Tex. Oct. 3, 2018), subsequently refiled as 1:18-cv-00990, and subsequently transferred as 3:19-cv-01904 (N.D. Cal.) (WHO).

244. This demand far exceeds the $33.6 million paid by Fortress in March 2018 to acquire the entire Uniloc Luxembourg portfolio (including the '999 patent). The value of the '999 patent had not changed in the interim, but what had changed was that the '999 patent was now aggregated under Fortress's control with other substitute patents as well as with complementary patents, providing Uniloc 2017 with the ability to pursue supracompetitive royalties. By seeking such outsized damages, the Uniloc Defendants signal their belief that the '999 patent represents a patent of significant importance in this market such that it would enable them to extract such supracompetitive royalties.

245. In addition, on July 12, 2017, Uniloc Luxembourg and Uniloc USA, under the control of Fortress, sued Apple in the Eastern District of Texas, claiming that electronic devices such as iPhones, iPads, iPods, and Mac devices that run iOS or Mac operating systems that include a "Continuity" capability that allows users to make a telephone call from such devices via an iPhone infringe the '127 and '134 patents.[83] The case was transferred to the Northern District of California, where the case was stayed pending *inter partes* review proceedings.

246. On April 10, 2019, Seven Networks sued Apple in the Eastern District of Texas. Seven Networks alleged that several models of the iPhone, iPad, Mac, iMac, and MacBook infringe the '986 patent and that Apple's servers, including those supporting the Apple Push Notification Service functionality, infringe the '176 patent.[84] Seven Networks also alleged infringement of 14 additional patents. Seven Networks' estimated damages for Apple's infringement of the '176 patent alone were approximately [redacted]. This amount exceeds the $33.6 million paid by Fortress in March 2018 to acquire the entire Uniloc Luxembourg portfolio, including the substitute '127 patent and '134 patent along with the complementary '999 patent and '877 patent. As substitute and complementary patents in the same relevant market as the '176 patent, the purchase price of these patents serves as a reliable proxy for the pre-aggregation value

[83] *Uniloc USA, Inc. v. Apple Inc.*, No. 2:17-cv-00535 (E.D. Tex. July 12, 2017), subsequently transferred as No. 3:18-cv-00572 (N.D. Cal.) (WHA).

[84] *Seven Networks, LLC v. Apple Inc.*, No. 2:19-cv-00115 (E.D. Tex. Apr. 10, 2019).

of the '176 patent. The supracompetitive licensing royalties Fortress's PAEs have sought or obtained are direct evidence of its market power. For example, Uniloc 2017 has been able to coerce at least one party (Samsung Electronics America, Inc.) to license its patents in the Mobile Device-to-Device Communication Through a Network-Coupled Intermediary Device Patents Market, even though the prior owners of the patents, owners with much experience in asserting patents, made no similar attempt to enforce the patents. Fortress (through its PAEs) has been able to acquire patents and then, through the benefit of its anticompetitive scheme, extract inflated royalties from licensees that reflect the competition that has been eliminated through Defendants' patent aggregation and far exceeds the actual value of the patents based on their technical and commercial merits.

247. Defendants' demands also show that Fortress has the power to control prices in the Mobile Device-to-Device Communication Through a Network-Coupled Intermediary Device Patents Market. As detailed above, Defendants have sought hundreds of millions of dollars from Apple.

D. Preventing Stalls for Cache Misses

248. Local cache management enables computer processors to store and retrieve information more efficiently. Cache memories are high performance memories used to store data that is most likely to be requested by the processor. In contrast to main memory, which responds to the processor with desired information when the processor addresses that information in the main memory, the cache can transparently provide the desired information without the need to be directly addressed by the processor. Cache memory is typically located physically close to the processor to ensure speed in retrieval, either by being integrated directly into the processor or on a separate chip that is connected to the processor. Performance of cache memory can be relevant to the performance of a device and there are a variety of cache management techniques intended to bolster performance. Many cache management techniques aim to prevent cache misses, i.e., to ensure the information most likely to be requested at a given point in time exists in the cache memory. Examples include setting rules on the types of information that are cached, or

determining thresholds for how frequently information must be accessed before it is stored in a cache. Nevertheless, despite these local cache management techniques, cache misses do occur on occasion when the information requested is not located in the cache memory. At the point of a cache miss, the goal of a designer of an electronic device will be to minimize the effects of the miss. There are specific techniques aimed at reducing the amount of time it takes for the cache module to return to normal operation after a cache miss—i.e., to prevent a stall or a prolonged delay. Preventing stalls in the event of a cache miss is commonly used in electronic devices containing memory, and there is no close substitute for the functionality.

249. Fortress, the Uniloc Defendants, and VLSI have aggregated patents relating to techniques for preventing stalls in the event of a cache miss in an antitrust market for patents purporting to cover local cache management capabilities, the "Preventing Stalls for Cache Misses Patents Market." The Preventing Stalls for Cache Misses Patents Market constitutes a relevant antitrust market where Fortress (either directly through its PAE subsidiaries or by acting in concert with the PAEs in which it invests) and other holders of patents claimed to read on electronic devices that support preventing stalls in the event of a cache miss compete with one another to license patents to suppliers of such devices.

250. Among the substitute patents Defendants have aggregated in the Preventing Stalls for Cache Misses Patents Market are U.S. Patent No. 6,058,437, and U.S. Patent No. 7,434,009, both of which purport to cover alternative techniques to improve the performance of local caching methods.

251. U.S. Patent No. 6,058,437 ("the '437 patent") is titled "D.M.A. Device That Handles Cache Misses by Managing an Address of an Area Allotted via a Daemon Processor" and issued on May 2, 2000. According to its abstract, the '437 patent relates to "[a] direct memory access processing device of communication equipment." Its claims are directed to improving cache performance by using a daemon processor to manage a portion of the memory. More specifically, the daemon processor allows the kernel (i.e., the main processing resource of the device) to resume normal operation immediately after a cache miss without a prolonged delay.

252. On its face, the '437 patent is assigned to Electronics & Telecommunications Research Institute ("ETRI"). On December 26, 2008, ETRI assigned one half of its interest in the '437 patent to IPG Electronics 502 Limited ("IPG Electronics 502"). On April 10, 2012, IPG Electronics 502 and ETRI assigned the '437 patent to Pendragon Electronics and Telecommunications Research LLC ("Pendragon Electronics"). On January 31, 2018, Pendragon Electronics assigned the '437 patent to Uniloc Luxembourg. On May 3, 2018, Uniloc Luxembourg assigned the '437 patent to Uniloc 2017.

253. U.S. Patent No. 7,434,009 ("the '009 patent") is titled "Apparatus and Method for Providing Information to a Cache Module Using Fetch Bursts" and issued on October 7, 2008. According to its abstract, the '009 patent relates to "providing information to a cache module." The '009 patent is directed to improving cache performance by optimizing the handling of cache misses. More specifically, the claimed technique performs multiple fetch bursts (rather than a single fetch burst) in response to a cache miss to enhance recovery time and prevent stalls.

254. On its face, the '009 patent is assigned to Freescale. On November 7, 2016, Freescale assigned the '009 patent to NXP USA, Inc. in connection with a merger with NXP and change of name. On February 1, 2019, NXP USA, Inc. assigned the '009 patent to Defendant VLSI.

255. In addition to the patents discussed immediately above, which are substitutes for one another, Uniloc and VLSI have acquired several additional patents directed to caching improvements that are complements to, and possibly substitutes for, the '437 patent and '009 patent.

256. U.S. Patent No. 6,301,641 ("the '641 patent") is titled "Method for Reducing the Frequency of Cache Misses in a Computer" and issued on October 9, 2001. According to its abstract, the '641 patent relates to "minimize[ing] the number of cache misses that occur for a sample of a typical execution of the program." The '641 patent is directed to improving cache performance by optimizing the placement of information in a cache.

257. On its face, the '641 patent is assigned to U.S. Philips Corporation ("U.S. Philips"). On April 13, 2009, U.S. Philips assigned the '641 patent to IPG Electronics 503. On April 10, 2012, IPG Electronics 503 assigned the '641 patent to Pendragon Wireless. On January 31, 2018, Pendragon Wireless assigned the '641 patent to Defendant Uniloc Luxembourg. On May 3, 2018, Defendant Uniloc Luxembourg assigned the '641 patent to Defendant Uniloc 2017.

258. U.S. Patent No. 8,219,761 ("the '761 patent") is titled "Multi-port High-level Cache Unit and a Method for Retrieving Information from a Multi-port High-level Cache Unit" and issued on July 10, 2012. On its face, the '761 patent is assigned to Freescale. On November 7, 2016, Freescale assigned the '761 patent to NXP as part of the merger between the companies. On February 1, 2019, NXP assigned the '761 patent to Defendant VLSI.

259. U.S. Patent No. 7,523,331 ("the '331 patent") is titled "Power Saving Operation of an Apparatus with Cache Memory" and issued on April 21, 2009. On its face, the '331 patent is assigned to NXP B.V. On December 15, 2013, NXP B.V. assigned the '331 patent to Breakwaters Innovations LLC ("Breakwaters"). On March 3, 2015, Breakwaters assigned the '331 patent back to NXP B.V. On August 16, 2016, NXP B.V. assigned the '331 patent to Defendant VLSI.

260. U.S. Patent No. 8,020,014 ("the '014 patent") is titled "Method for Power Reduction and a Device Having Power Reduction Capabilities" and issued on September 13, 2011. On its face, the '014 patent is assigned to Freescale. On August 16, 2016, Freescale assigned the '014 patent to Defendant VLSI.

261. U.S. Patent No. 8,156,357 ("the '357 patent") is titled "Voltage-based Memory Size Scaling in a Data Processing System" and issued on April 10, 2012. On its face, the '357 patent is assigned to Freescale. On November 7, 2016, Freescale assigned the '357 patent to NXP as part of the merger between the companies. On December 22, 2018, NXP assigned the '357 patent to Defendant VLSI.

262. Defendants' aggregation of patents in the Preventing Stalls for Cache Misses Patents Market (including at least two substitute patents and five complementary and/or substitute patents) has reduced competition in that market, leading to inflated royalties and decreased

licensing output. For example, the '437 patent and the '009 patent both purport to cover techniques for preventing stalls for cache misses. Whereas the '437 patent describes achieving the improvement by handling cache misses using an accelerated operation of the main processor, the '009 patent describes preventing stalls by handling cache misses using an accelerated operation of the main processor. Accordingly, the background processor of the '437 patent is a substitute for the accelerated operation of the main processor of the '009 patent, and vice versa. When the '437 and '009 patents were owned by different entities, a party wishing to use one of these potential substitute technologies would be able to take advantage of competition between the owners of these patents when attempting to secure a license. But because of Defendants' unlawful aggregation of patents, Defendants now control both substitute technologies, eliminating such competition.

263. That lessening of competition is reflected by the evidence of supracompetitive royalties sought by Defendants. The prior owners of the patents Uniloc 2017 and VLSI have aggregated in the Preventing Stalls for Cache Misses Patents Market never asserted these patents because they would not have been able to obtain royalties sufficient to justify the cost of assertion absent the market power created by the Fortress-led aggregation scheme and the resulting elimination of competition. Likewise, the prior owners would not have transferred the aggregated patents if they could have licensed the patents for the amounts that Defendants have either received or seek in litigation. Defendants have pursued multiple assertions.

264. Freescale, the former assignee of the '009, '761, '014, and '357 patents, asserted numerous patents in cases against a variety of defendants over the years, indicating that it was capable and willing to do so in the appropriate circumstances. Those cases include at least the following:

- *Freescale Semiconductor, Inc. v. Promos Technologies*, No. 4-06-cv-00491 (E.D. Tex.);
- *Freescale Semiconductor, Inc. v. LSI Corporation*, No. 2-08-cv-00314 (E.D. Tex.);

- *Freescale Semiconductor, Inc. v. Analog Devices Inc.*, No. 1-04-cv-00404 (E.D. Tex.);
- *Freescale Semiconductor, Inc. v. Panasonic Corporation et al.*, No. 1-10-cv-00139 (W.D. Tex.);
- *Freescale Semiconductor, Inc. v. Funai Corporation, Inc. et al.*, No. 1-10-cv-00138 (W.D. Tex.);
- *Freescale Semiconductor, Inc. v. Zoran Corporation et al.*, No. 1-11-cv-00472 (W.D. Tex.);
- *Microchip Technology, Inc., et al. v. United Module Corp. et al.*, No. 2-11-cv-00332 (E.D. Tex.);
- *Freescale Semiconductor, Inc. v. Vizio, Inc. et al.*, No. 1-11-cv-00704 (W.D. Tex.);
- *Freescale Semiconductor, Inc. v. Marvell Semiconductor, Inc.*, No. 1-12-cv-00601 (W.D. Tex.);
- *Freescale Semiconductor, Inc. v. MediaTek Inc.*, No. 1-12-cv-00603 (W.D. Tex.);
- *Freescale Semiconductor, Inc. v. CSR Technology, Inc. et al.*, No. 1-12-cv-00604 (W.D. Tex.);
- *Freescale Semiconductor, Inc. v. Funai Electric Company, Ltd. et al.*, No. 1-12-cv-00641 (W.D. Tex.);
- *Freescale Semiconductor, Inc. v. Sanyo Electric Co., Ltd. et al.*, No. 1-12-cv-00642 (W.D. Tex.);
- *Freescale Semiconductor, Inc. v. TPV Technology Limited et al.*, No. 1-12-cv-00643 (W.D. Tex.);
- *Freescale Semiconductor, Inc. v. Amtran Technology Co., Ltd., et al.*, No. 1-12-cv-00644 (W.D. Tex.); and
- *Freescale Semiconductor, Inc. v. MediaTek USA, Inc. et al.*, No. 5-14-cv-02185 (N.D. Cal.).

265. Further, Freescale Semiconductor Ltd.'s (the parent of Freescale) 2015 10-K noted that "[w]e generate revenue from licensing or selling our patents and certain technologies to third parties" and that "[i]n situations where we believe that a third party has infringed on our intellectual property, we enforce our rights through appropriate legal means to the extent that we determine the potential benefits of such actions outweigh any costs involved." In particular, when Freescale owned the '014 patent, it never pursued infringement claims against Intel for functionality that

then existed in Intel products and that VLSI has later accused of infringement. VLSI filed suit against Intel asserting the '014 patent on October 2, 2017. Among other Intel products, VLSI's complaint accuses the Intel Core i3 of infringement.[85] The Core i3 was introduced in 2010. Given the six-year limitation on damages, the period from the issuance of the '014 patent on September 13, 2011 to October 2011 is one in which Intel paid no royalties for the '014 patent, royalties cannot be obtained from Intel for the '014 patent, and Intel faced no assertion of the '014 patent. But, as described further below, after aggregation and the elimination of competition, VLSI has demanded supracompetitive royalties from Intel and imposed on Intel the cost of defending the assertion of the '014 patent.

266. Likewise, NXP, a former owner of the '009, '761, '331, and '357 patents, has asserted patents on a number of occasions, including at least:

- *NXP USA Inc. et al. v. Impinj Inc.*, No. 2-20-cv-01503 (W.D. Wash.);
- *NXP USA, Inc. et al. v. Impinj, Inc.*, No. 1-19-cv-01875 (D. Del.);
- *NXP BV et al. v. Dell Inc.*, No. 1-15-cv-00146 (D. Del.);
- *NXP BV v. Marvell Semiconductor, Inc. et al.*, No. 5-15-cv-00290 (N.D. Cal.);
- *NXP B.V. v. Broadcom Corporation*, No. 5-14-cv-00826 (N.D. Cal.);
- *NXP B.V. v. Broadcom Corporation*, No. 2-13-cv-01883 (D. Nev.);
- *NXP BV v. Nintendo Co. Ltd. et al.*, No. 2-13-cv-00453 (D. Nev.); and
- *NXP BV v. Research In Motion Ltd., et al.*, No. 6-12-cv-00498 (M.D. Fla.).

267. NXP's 2018 annual report provides that the "creation and use of intellectual property is a key aspect of our strategy to differentiate ourselves in the marketplace" and that "[i]n situations where we believe that a third party has infringed on our intellectual property, we enforce our rights through all available legal means to the extent that we determine the benefits of such actions to outweigh any costs and risks involved." In particular, when NXP and Breakwaters

[85] *VLSI Tech. LLC v. Intel Corp.*, No. 5:17-cv-05671 (N.D. Cal. Oct. 2, 2017) (BLF), Dkt. 1 ¶ 98.

owned the '331 patent, they never pursued infringement claims against Intel for functionality that then existed in Intel products and that VLSI has later accused of infringement. VLSI filed suit against Intel asserting the '331 patent on June 29, 2018. Among other products VLSI accused of infringement are chipsets that were released in 2010. Given the six-year limitation on damages, the period from the issuance of the '331 patent on April 21, 2009 to June 2012 is one in which Intel paid no royalties for the '331 patent, royalties cannot be obtained from Intel for the '331 patent, and Intel faced no assertion of the '331 patent. But, as described further below, after aggregation and the elimination of competition, VLSI has demanded supracompetitive royalties from Intel and imposed on Intel the cost of defending the assertion of the '331 patent. Likewise, when NXP and Freescale owned the '357 patent, they never pursued infringement claims against Intel for functionality that then existed in Intel products and which VLSI has later accused of infringement. VLSI filed suit against Intel asserting the '357 patent on April 11, 2019. VLSI accused Intel's Ivy Bridge processors of infringing the '357 patent. Intel introduced Ivy Bridge processors in 2012. Given the six-year limitation on damages, the period from the issuance of the '357 patent on April 10, 2012 to April 2013 is one in which Intel paid no royalties for the '357 patent, royalties cannot be obtained from Intel for the '357 patent, and Intel faced no assertion of the '357 patent. But, as described further below, after aggregation and the elimination of competition, VLSI has demanded supracompetitive royalties from Intel and imposed on Intel the cost of defending the assertion of the '357 patent.

268. Similarly, ETRI, a former owner of the '437 patent, is a South Korean research organization that entered an agreement with SPH America under which ETRI granted "an exclusive license to SPH America to use the licensed patents, including to sublicense them to third parties and bring infringement actions. SPH America . . . is obligated use its best efforts to make licensing and litigation decisions that protect the interests of ETRI. SPH bears all the expense of any litigation and is required to pay ETRI between 50% to 70% of any third-party royalties and any litigation proceeds SPH America collects. SPH America has guaranteed minimum payments to ETRI that increase from approximately $268 million per year in 2007, to $896 million per year

from 2016 and thereafter."[86] SPH America—with a strong financial incentive to generate licensing revenue on ETRI's behalf—has been a frequent litigant, including in at least the following cases and including against Apple:

- *SPH America, LLC v. High Tech Computer Corporation et al.*, 1-08-cv-00702 (E.D. Va.);
- *SPH America, LLC v. High Tech Computer Corporation et al.*, 3-08-cv-02146 (S.D. Cal.);
- *SPH America, LLC v. Kyocera Corporation et al.*, 2-09-cv-00276 (E.D. Va.);
- *SPH America, LLC v. Nokia Corporation et al.*, 1-09-cv-00701 (E.D. Va.);
- *SPH America, LLC v. Acer, Inc. et al.*, 1-09-cv-00740 (E.D. Va.);
- *SPH America, LLC v. Apple, Inc. et al.*, 1-09-cv-00776 (E.D. Va.);
- *SPH America, LLC v. Acer, Inc., et. al.*, 3-09-cv-02535 (S.D. Cal.);
- *SPH America, LLC v. Apple, Inc. et al.*, 3-10-cv-00404 (S.D. Cal.);
- *SPH America, LLC v. AT&T Mobility*, LLC 3-13-cv-02318 (S.D. Cal.);
- *SPH America, LLC v. Sprint Corporation*, 3-13-cv-02319 (S.D. Cal.);
- *SPH America, LLC v. Research in Motion Limited*, 3-13-cv-02320 (S.D. Cal.);
- *SPH America, LLC v. Huawei Technologies, Co., Ltd. et al.*, 3-13-cv-02323 (SDCA);
- *SPH America, LLC v. T-Mobile USA, Inc.*, 3-13-cv-02324 (S.D. Cal.);
- *SPH America, LLC v. Verizon Communications, Inc. et al.*, 3-13-cv-02325 (S.D. Cal.);
- *SPH America, LLC v. ZTE (USA) Inc.*, 3-13-cv-02326 (S.D. Cal.); and
- *SPH America, LLC v. Samsung Electronics Co.*, Ltd. et al., 3-14-cv-01474 (S.D. Cal.).

269. U.S. Philips, the former owner of the '641 patent, also has asserted a number of other patents against other parties, including at least:

[86] *SPH Am., LLC v. Huawei Techs., Co.*, No. 13-CV-2323-CAB-KSC, 2017 WL 1331920, at *2 (S.D. Cal. Apr. 10, 2017)

- *U.S. Philips Corp. v. Iwasaki Electric Co., et al.*, No. 1-03-cv-00172 (S.D.N.Y.);
- *US Philips Corporation et al. v. CDVideo Manufacturing Inc. et al.*, No. 2-04-cv-02456 (C.D. Cal.);
- *U.S. Philips Corporation et al. v. Wings Digital Corporation et al.*, No. 2-04-cv-02573 (E.D.N.Y.);
- *US Philips Corporation v. Media One CD Manufacturing Inc.*, No. 2-05-cv-01501 (C.D. Cal.);
- *U.S. Philips Corporation v. Synergy Dynamic International, LLC, et al.*, No. 2-05-cv-00577 (D. Nev.);
- *U.S. Philips Corporation v. ZWT Inc. et al.*, No. 2-05-cv-03892 (E.D.N.Y.);
- *US Philips Corporation v. Front Row Entertainment Inc. et al.*, No. 2-05-cv-06445 (C.D. Cal.);
- *U.S. Philips Corporation v. ATI Technologies Inc.*, No. 1-05-cv-08176 (S.D.N.Y.);
- *U.S. Philips Corporation v. Konica Minolta Holdings, Inc. et al.*, No. 1-06-cv-01402 (S.D.N.Y.);
- *US Philips Corporation v. International Norcent Technology Inc. et al.*, No. 2-06-cv-01366 (C.D. Cal.);
- *US Philips Corporation v. Eastman Kodak Company*, No. 1-06-cv-00251 (D. Del.);
- *US Philips Corporation et al. v. Apex Digital Inc. et al.*, No. 2-06-cv-03588 (C.D. Cal.);
- *U.S. Philips Corporation v. Pantech Wireless, Inc.*, No. 2-06-cv-04583 (E.D. Penn.), subsequently transferred as 1-08-cv-02526 (S.D.N.Y.);
- *U.S. Philips Corporation v. Shanghai Hongsheng Technology Co Ltd et al.*, No. 8-08-cv-00795 (C.D. Cal.);
- *U.S. Philips Corporation et al. v. Motorola, Inc.*, No. 7-09-cv-07820 (S.D.N.Y.);
- *US Philips Corporation v. Samsung Electronics Company Ltd. et al.*, No. 1-09-cv-00692 (D. Del.); and
- *U.S. Philips Corporation v. Palm, Inc.*, No. 3-10-cv-02623 (N.D. Cal.).

270. Thus, despite a willingness to engage in patent litigation, prior owners of patents that VLSI, Uniloc, and Fortress have aggregated in the Preventing Stalls for Cache Misses Patents

Market did not deem them to be worth the cost of assertion. By contrast, Defendant VLSI, under Fortress's control and with the benefit of aggregation, has pursued a litigation campaign based on certain of these patents.

271. As part of the VLSI California Action described above, VLSI has alleged that Intel's microprocessors infringe the '014 patent by comprising features for selectively providing power to at least a portion of a component of an integrated circuit during a low power mode.[87] Defendant VLSI also accused Intel of infringing seven additional patents in that action. Intel sought VLSI's permission to disclose (under seal) the damages estimate for Intel's alleged infringement of the '014 patent, as well as the financial terms of its purchase of the patent from NXP (which had merged with Freescale); however, VLSI refused that consent and it opposed Intel's request to the court to modify the protective order in that case to allow the information to be used here.[88] VLSI's refusal and its opposition to Intel's request to the court to modify the protective order to allow use of the information here support an inference that the information at issue would be helpful in showing a significant disparity between the terms on which VLSI acquired the '014 patent and the damages it now seeks for that patent. The court refused Intel's request.[89] The damages estimates VLSI has disclosed publicly in connection with its assertion of the eight patents asserted in the VLSI California Action are exorbitant: as discussed above, VLSI disclosed that it would seek $7.1 billion in that suit. Thus, Intel's 10-K for 2020 reports that for the California case in which the '014 patent is asserted, "VLSI estimated its damages to be as high as $7.1 billion, and its complaint further sought enhanced damages, future royalties, attorneys' fees, costs, and interest." Further, by seeking such outsized damages, VLSI signals its belief that the '014 patent represents a patent of significant importance in this market such that it would enable it to extract such a supracompetitive royalty.

[87] *VLSI Tech. LLC v. Intel Corp.*, No. 5:17-cv-05671 (N.D. Cal.) (BLF).
[88] *VLSI Tech. LLC v. Intel Corp.*, No. 5:17-cv-05671 (N.D. Cal. Jan. 26, 2021) (BLF), Dkt. 294.
[89] *VLSI Tech. LLC v. Intel Corp.*, No. 5:17-cv-05671 (N.D. Cal. Feb. 5, 2021) (BLF), Dkt. 297.

272. VLSI's damages demand significantly exceeds [redacted]. Similarly, VLSI's damages demand significantly exceeds what Freescale sought for a license to this very patent. As discussed above, [redacted]. The value of the '014 patent had not changed in the interim, but what had changed is that the '014 patent was now aggregated under Fortress's control with other substitute patents as well as with complementary patents.

273. VLSI's damages request is also significantly more than Freescale has sought for other of its patents concerning microprocessor features. Specifically, in December 2014, Intel purchased from Freescale for [redacted] a total of 29 patent families, including 13 U.S. patents, for example: U.S. Patent Nos. 6,769,076 (Real-Time Processor Debug System); 6,845,419 (Flexible Interrupt Controller that Includes an Interrupt Force Register); 7,248,069 (Method and Apparatus for Providing Security for Debug Circuitry); 5,889,788 (Wrapper Cell Architecture for Path Delay Testing of Embedded Core Microprocessors and Method of Operation); 6,134,675 (Method of Testing Multi-Core Processors and Multi-Core Processor Testing Device); 7,296,137 (Memory Management Circuitry Translation Information Retrieval during Debugging); 7,299,335 (Translation Information Retrieval Transparent to Processor Core); and 8,041,901 (Performance Monitoring Device and Method thereof). And in May 2015, [redacted], including patents such as: U.S. Patent Nos. 5,943,274 (Method and Apparatus for Amplifying a Signal to Produce a Latched Digital Signal); 6,917,555 (Integrated Circuit Power Management for Reducing Leakage Current in Circuit Arrays and Method therefor); 7,200,719 (Prefetch Control in a Data Processing System); 7,638,903 (Power Supply Selection for Multiple Circuits on an Integrated Circuit); and 6,013,571 (Microelectronic Assembly including Columnar Interconnections and Method for Forming Same).

274. As part of the VLSI Delaware Action described above, Defendant VLSI alleged that Intel chipsets infringe the '331 patent.[90] Defendant VLSI also accused Intel of infringing four additional patents. Intel sought VLSI's permission to disclose (under seal) the damages it claims for Intel's alleged infringement of the '331 patent, as well as the financial terms of its purchase of the patent from NXP; however, VLSI refused that consent and opposed Intel's motion to modify the protective order to allow the use of information from that case under seal. The court found, however, that "Intel has done enough to show good cause to modify the protective order."[91] The damages demands VLSI has disclosed publicly in connection with the VLSI Delaware Action are exorbitant. For example, VLSI's counsel told the court in a December 2019 hearing that "[a]s we see on the screen and in Intel's own admission, billions of dollars are at stake in the case."[92] VLSI's counsel also represented to the court that "everyone knows we're in the billions of dollars here."[93] Intel's 2020 10-K discloses to investors that in the Delaware litigation VLSI is seeking $4.13 billion for the '331 patent and one other patent. [redacted] Further, by seeking such outsized damages, VLSI signals its belief that the '331 patent represents a patent of significant importance in this market such that it would enable it to extract such supracompetitive royalties.

275. [redacted]. The value of the '331 patent had not changed in the interim, but what had changed was that the '331 patent was now aggregated under Fortress's control with other substitute patents as well as with

[90] *VLSI Tech. LLC v. Intel Corp.*, No. 1:18-cv-00966 (D. Del.).
[91] *VLSI Tech. LLC v. Intel Corp.*, No. 1:18-cv-00966 (D. Del. Feb. 3, 2021), Dkt. 693.
[92] *VLSI Tech. LLC v. Intel Corp.*, No. 1:18-cv-00966 (D. Del.), Dkt. 455 at 47:3-4.
[93] *Id.* at 80:16-17.

complementary patents. VLSI's demand amount is also significantly more than NXP has sought for other of its patents concerning microprocessor features. Specifically, in January 2014, [redacted], for example, U.S. Patent Nos. 7,500,126 (Arrangement and Method for Controlling Power Modes of Hardware Resources); 6,748,472 (Method and System for an Interrupt Accelerator that Reduces the Number of Interrupts for a Digital Signal Processor); 7,102,382 (Digital Electronic Circuit with Low Power Consumption); and 8,181,054 (Arrangement and Method for Controlling Power Modes of Hardware Resources). In December 2014, [redacted], for example, U.S. Patent Nos. 9,032,124 (Definition of Wakeup Bus Messages for Partial Networking); 6,664,821 (Line Driver with Current Source Output and Low Sensitivity to Load Variations); 8,407,339 (Star Network and Method for Preventing a Repeated Transmission of a Control Symbol in such a Star Network); 7,620,135 (Data Processing Apparatus that Identifies a Communication Clock Frequency); and 8,527,738 (Flexray System Using Efficient Storage of Instructions). And in December 2014, [redacted], including for example: U.S. Patent Nos. 9,939,141 (Active Thermal Management Device and Thermal Management Method); 9,078,318 (Switched Mode Power Converter and Method of Operating the Same); 9,036,375 (Controller that Determines Average Output Current of a Switching Circuit); 8,120,289 (Optical Electrical System in Package for LED Based Lighting System); and 7,688,600 (Multi-Resonance Converter).

276. And as part of the VLSI Texas Actions described above, Defendant VLSI has alleged that Intel's microprocessors infringe the '357 patent.[94] Defendant VLSI also accused Intel of infringing seven additional patents in these actions. Intel's 2020 10-K discloses that "VLSI is seeking damages of approximately $11 billion collectively" across the three pending cases in Texas where a total of eight patents were asserted, including the '357 patent. Intel sought VLSI's

[94] *VLSI Tech. LLC v. Intel Corp.*, No. 6:19-cv-00254 (W.D. Tex. Apr. 11, 2019), subsequently transferred as No. 1:19-cv-00977 (W.D. Tex.).

permission to disclose (under seal) the specific damages claim for Intel's alleged infringement of the '357 patent, the financial terms of its purchase of the patent from NXP (which had merged with Freescale), and certain statements that VLSI's experts have made about the value and significance of the '357 patent; however, VLSI refused that consent. Further, VLSI opposed Intel's request to the Texas court to modify the terms of the protective order in that case to allow Intel and Apple to submit the requested information under seal in this case. VLSI's refusal and its opposition to Intel's request to the court to modify the protective order to use the information here support an inference that the information at issue would be helpful in showing a significant disparity between the terms on which VLSI acquired the '357 patent and the damages it now seeks for that patent. The court refused Intel's request to modify the protective order.[95] Further, by seeking such outsized damages, VLSI signals its belief that the '357 patent represents a patent of significant importance in this market such that it would enable it to extract such supracompetitive royalties.

277. As discussed in paragraphs 125 and 272 above, these amounts significantly exceed the [redacted].

278. The amounts that VLSI is seeking for the '014 patent, the '331 patent, and the '357 patent also far exceed the $33.6 million that Fortress paid in 2018 to acquire the entire Uniloc Luxembourg portfolio when it included the '437 patent and the '641 patent, a substitute patent and a complementary patent, respectively, in this relevant market. As substitute and complementary patents in the same relevant market as the '014 patent, '331 patent, and '357 patent, the purchase price of these patents serves as a reliable proxy for the pre-aggregation value of these patents.

279. Further, as described above, SoftBank acquired Fortress in its entirety at the end of 2017 for $3.3 billion, after Fortress had formed VLSI in 2016 and it had acquired the '331 patent and the '014 patent in this relevant market. Fortress describes itself as a "highly diversified global investment firm" and it has many areas of investment other than patent assertions. The fact that

[95] *VLSI Tech. LLC v. Intel Corp.*, No. 1:19-cv-00977 (W.D. Tex. Feb. 1, 2021), Dkt. 421 at 17:14-21.

Fortress's total sales price was less than VLSI's litigation demands for a handful of patents demonstrates that the royalties Fortress seeks are supracompetitive and dependent on the anticompetitive effects of patent aggregation rather than a fair market rate.

280. Intel has been injured by the elimination of competition resulting from Fortress, Uniloc 2017, and VLSI's aggregation of patents in the Preventing Stalls for Cache Misses Patents Market. Specifically, by eliminating competition, this aggregation positioned Defendants to seek supracompetitive royalties that the prior patent holders were unable to seek because of the competitive constraints they faced. Because it has refused to capitulate to exorbitant royalty demands, Intel has been injured by Fortress and VLSI having targeted Intel as part of their litigation campaign based on these patents. Moreover, Apple and Intel have been injured as a result of the ongoing threat that Defendants will continue to assert patents in the Preventing Stalls for Cache Misses Patents Market against them.

281. The supracompetitive licensing royalties Fortress's PAEs have sought are direct evidence of Defendants' market power and the anticompetitive effects that have resulted from their anticompetitive patent aggregation scheme. For example, VLSI has sought exorbitant royalties from Intel, even though the prior owners of the patents, owners with much experience in asserting patents, made no similar attempt to enforce the patents. Fortress (through its PAEs) has been able to acquire patents and then, through the benefit of its anticompetitive scheme, seek inflated royalties from licensees that reflect the competition that has been eliminated through Defendants' patent aggregation and far exceeds the actual value of the patents based on their technical and commercial merits.

282. Defendants' demands show that Fortress has the power to control prices in the Preventing Stalls for Cache Misses Market. As detailed above, VLSI has sought billions of dollars from Intel.

E. Arbitrating Multiple Requests to Access a Memory Bus

283. In electronic devices, it is common for multiple processors or components to share memory. Designers of electronic devices strive to improve the efficiency with which processors

or components share memory. There are many techniques aimed at improving such memory sharing, including interconnect technologies, such as crossbar switches, designed to prevent or reduce bottlenecks, and cache coherence protocols that ensure that updates from one processor are reflected in other processors. There are also techniques for improving access to shared memory aimed at arbitrating multiple requests to access a memory bus, i.e., techniques that determine the order in which the requests are processed. These techniques comprise algorithms for resolving contentions among multiple concurrently pending requests to access the memory bus. Specifically, when multiple requests are received simultaneously, techniques to arbitrate multiple requests to a memory bus determine the order in which the requests are processed. Multi-processor electronic devices or components (such as a computer with multiple processors or a computer microprocessor containing multiple processing cores) in which the processors have shared access to any computer memory must use some protocol to handle multiple requests to that shared memory. There are no close substitutes for these techniques.

284. Fortress, the Uniloc Defendants, and VLSI have aggregated patents in an antitrust market for patents purporting to cover shared memory access techniques, the "Arbitrating Multiple Requests to Access a Memory Bus Patents Market." The Arbitrating Multiple Requests to Access a Memory Bus Patents Market constitutes a relevant antitrust market where Fortress (either directly through its PAE subsidiaries or by acting in concert with the PAEs in which it invests) and other holders of patents claimed to read on electronic devices or components thereof that support arbitrating multiple requests to access a memory bus capabilities compete with one another to license patents to suppliers of such devices.

285. Among the substitute patents Defendants have aggregated in the Arbitrating Multiple Requests to Access a Memory Bus Patents Market are U.S. Patent No. 5,659,687 and U.S. Patent No. 7,606,983, both of which purport to cover alternative techniques to resolving multiple concurrent access requests for a shared memory.

286. U.S. Patent No. 5,659,687 ("the '687 patent") is titled "Device for Controlling Memory Data Path in Parallel Processing Computer System" and issued on August 19, 1997.

According to its abstract, the '687 patent relates to "[a] memory data path controller for a large-scale parallel processing computer system in which, when a network interface and bus interface request access to a single-port memory, a dual path controller dividedly stores memory access requests in network queue and bus queue." It claims systems that arbitrate memory access requests present in a network queue and a bus queue depending on an assigned priority of the access sequence.

287. On its face, the '687 patent is assigned to ETRI. On December 26, 2008, ETRI assigned one half of its interest in the '687 patent to IPG Electronics 502. On April 10, 2012, ETRI and IPG Electronics 502 assigned the '687 patent to Pendragon Electronics. On October 31, 2012, Pendragon Electronics assigned the '687 patent to Phoenicia Innovations LLC ("Phoenicia"). And on January 31, 2018, Phoenicia assigned the '687 patent to Defendant Uniloc Luxembourg, which then assigned the patent to Defendant Uniloc 2017 just a few months later, on May 3, 2018.

288. U.S. Patent No. 7,606,983 ("the '983 patent") is titled "Sequential Ordering of Transactions in Digital Systems with Multiple Requestors" and issued on October 20, 2009. According to its abstract, the '983 patent relates to "[a] digital system with an improved transaction ordering policy." It claims systems for and methods of processing multiple access requests by a controller in a specific order, including by providing a way to resolve any contentions that occur when more than one access request is active at the same time. More specifically, the patent purports to cover techniques for arbitrating contentions by selecting a performance order that conforms to ordering information contained within each access request.

289. On its face, the '983 patent is assigned to NXP B.V. On February 1, 2019, NXP B.V. assigned the '983 patent to Defendant VLSI.

290. In addition to the patents discussed immediately above, Uniloc has acquired an additional patent directed to caching improvements that is a complement to, and possibly a substitute for, the '687 patent and the '983 patent.

291. U.S. Patent No. 7,023,850 ("the '850 patent") is titled "Multicasting Apparatus and Method in Shared Memory Switch" and issued on April 4, 2006. According to its abstract, the '850 patent relates to "[a] multicasting system and method for use in a shared memory-based switch." The '850 patent is directed to techniques for shared memory access using input and output subqueues.

292. On its face, the '850 patent is assigned to ETRI. On December 26, 2008, ETRI assigned one half of its interest in the '850 patent to IPG Electronics 502. On April 10, 2012, ETRI and IPG Electronics 502 assigned the '850 patent to Pendragon Electronics. On January 31, 2018—the same day Phoenicia assigned the '687 patent to Defendant Uniloc Luxembourg—Pendragon Electronics assigned the '850 patent to Defendant Uniloc Luxembourg, which then assigned the patent to Defendant Uniloc 2017 on May 3, 2018.

293. Defendants' aggregation of patents in the Arbitrating Multiple Requests to Access a Memory Bus Patents Market (including at least two substitute patents and one complementary and/or substitute patent) has reduced competition in that market, leading to inflated royalties and decreased licensing output. For example, the '687 patent purports to cover a method for handling multiple concurrent requests to access a shared memory based on the priority of the requests. Meanwhile, the '850 patent purports to cover a method for handling multiple concurrent requests to access a shared memory based on the queue in which the requests appear. Still further, the '983 patent purports to cover a method for handling multiple concurrent requests based on the sequence in which the requests are received. These three approaches for handling concurrent access requests—priority-based arbitration, queue-based, and sequence-based—are substitutes for one another. When the '687 and '983 patents were owned by different entities, a party wishing to use one of these potential substitute technologies would be able to take advantage of competition between the owners of these patents when attempting to secure a license. But because of Defendants' unlawful aggregation of patents, Defendants now control each of the substitute technologies, eliminating such competition.

294. That lessening of competition is reflected by the evidence of supracompetitive royalties sought by Defendants. The prior owners of the '687 patent (ETRI and IPG Electronics 502, then Pendragon Electronics, then Phoenicia), the '850 patent (ETRI and IPG Electronics 502, then Pendragon Electronics), and the '983 patent (NXP B.V.) never asserted these patents because they would not have been able to obtain royalties sufficient to justify the cost of assertion absent the market power created by the Fortress-led aggregation scheme and the resulting elimination of competition. Likewise, the prior owners would not have transferred the aggregated patents if they could have licensed the patents for the amounts that Defendants have either received or seek in litigation. Defendant VLSI has pursued a lawsuit involving the '983 patent.

295. As outlined above, both ETRI and NXP have previously asserted patents over the years, indicating that they are willing and able to do so in the appropriate circumstances. Thus, despite a willingness to engage in patent litigation, the prior owners did not deem the patents under Defendants' control in the Arbitrating Multiple Requests to Access a Memory Bus Patents Market to be worth the cost of assertion. In particular, when NXP owned the '983 patent, it never pursued infringement claims against Intel for functionality that then existed in Intel products and that VLSI later accused of infringement. VLSI filed suit against Intel asserting the '983 patent on April 11, 2019. VLSI accused Intel products of infringing the '983 patent that use the Intel Quick Path Interconnect technology, which included products that launched in 2008. Given the six-year limitation on damages, the period from the issuance of the '983 patent on October 20, 2009 to April 2013 is one in which Intel paid no royalties for the '983 patent, royalties cannot be obtained from Intel for the '983 patent for that period, and Intel faced no assertion of the '983 patent. But, as described further below, after aggregation and the elimination of competition, VLSI has demanded supracompetitive royalties from Intel and imposed on Intel the cost of defending the assertion of the '983 patent.

296. Intel has been injured by the elimination of competition resulting from Defendants' aggregation of patents in the Arbitrating Multiple Requests to Access a Memory Bus Patents Market. Specifically, this aggregation positioned Fortress and VLSI to seek supracompetitive

royalties that the prior patent holders were unable to seek because of the competitive constraints they faced. Because it has refused to capitulate the exorbitant royalty demands, Intel has been injured by VLSI having targeted Intel for enforcement of the '983 patent. Moreover, Apple and Intel have been injured as a result of the ongoing threat that Defendants will continue to assert patents in the Arbitrating Multiple Requests to Access a Memory Bus Patents Market against them.

297. As described above, Defendant VLSI filed suit against Intel on March 1, 2019 asserting the '983 patent and five other patents.[96] Just over a month later, on April 11, 2019, VLSI voluntarily dismissed the suit and re-filed three actions in the Western District of Texas, across which it asserted eight patents, including the '983 patent.[97] In its complaints, Defendant VLSI alleged that an interconnect protocol called Quick Path Interconnect that is contained in certain Intel microprocessors infringes the '983 patent.

298. Intel's 2020 10-K discloses that "VLSI is seeking damages of approximately $11 billion collectively" across the three pending cases in Texas where a total of eight patents were asserted, including the'983 patent. Intel sought VLSI's permission to disclose (under seal) the specific damages it claims for Intel's alleged infringement of the '983 patent, the financial terms of its purchase of the patent from NXP, and certain statements that VLSI's experts have made about the value and significance of the '983 patent; however, VLSI refused that consent. Further, VLSI opposed Intel's request to the Texas court to modify the terms of the protective order in that case to allow Intel and Apple to submit the requested information under seal in this case. VLSI's refusal and its opposition to Intel's request to the court support an inference that the information at issue would be helpful in showing a significant disparity between the terms on which VLSI acquired the '983 patent and the damages it now seeks for that patent. Further, by seeking such outsized damages, VLSI signals its belief that the '983 patent represents a patent of significant importance in this market such that it would enable it to extract such a supracompetitive royalty.

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[96] *VLSI Technology LLC v. Intel Corp.*, No. 1:19-cv-00426 (D. Del. Mar. 1, 2019).

[97] *VLSI Technology LLC v. Intel Corp.*, No. 6:19-cv-00256 (W.D. Tex. Apr. 11, 2019), subsequently consolidated under No. 6:19-cv-00254 (W.D. Tex.) and transferred as No. 1:19-cv-00977 (W.D. Tex.).

299. The amount VLSI is seeking for the '983 patent far exceeds the $33.6 million paid by Fortress in March 2018 for substantially all of Uniloc Luxembourg's assets, including its portfolio with the substitute '687 patent and the complementary '850 patent. As substitute and complementary patents in the same relevant market as the '983 patent, the purchase price of these patents serves as a reliable proxy for the pre-aggregation value of the '983 patent.

300. The amount VLSI is seeking for the '983 patent is also significantly more than NXP sought for other of its patents concerning microprocessor features. Specifically, in January 2014, [redacted], for example, U.S. Patent Nos. 7,500,126 (Arrangement and Method for Controlling Power Modes of Hardware Resources); 6,748,472 (Method and System for an Interrupt Accelerator that Reduces the Number of Interrupts for a Digital Signal Processor); 7,102,382 (Digital Electronic Circuit with Low Power Consumption); and 8,181,054 (Arrangement and Method for Controlling Power Modes of Hardware Resources). In December 2014, [redacted], for example, U.S. Patent Nos. 9,032,124 (Definition of Wakeup Bus Messages for Partial Networking); 6,664,821 (Line Driver with Current Source Output and Low Sensitivity to Load Variations); 8,407,339 (Star Network and Method for Preventing a Repeated Transmission of a Control Symbol in such a Star Network); 7,620,135 (Data Processing Apparatus that Identifies a Communication Clock Frequency); and 8,527,738 (Flexray System Using Efficient Storage of Instructions). And in December 2014, [redacted], including for example: U.S. Patent Nos. 9,939,141 (Active Thermal Management Device and Thermal Management Method); 9,078,318 (Switched Mode Power Converter and Method of Operating the Same); 9,036,375 (Controller that Determines Average Output Current of a Switching Circuit); 8,120,289 (Optical Electrical System in Package for LED Based Lighting System); and 7,688,600 (Multi-Resonance Converter).

301. The supracompetitive licensing royalties Fortress's PAEs have sought are evidence of Defendants' market power and the anticompetitive effects that have resulted from their

anticompetitive patent aggregation scheme. For example, VLSI has sought exorbitant royalties from Intel, even though the prior owners of the patents, owners with much experience in asserting patents, made no similar attempt to enforce the patents. Fortress (through its PAEs) has been able to acquire patents and then, through the benefit of its anticompetitive scheme, seek inflated royalties from licensees that reflect the competition that has been eliminated through Defendants' patent aggregation and far exceeds the actual value of the patents based on their technical and commercial merits.

302. Defendants' demand also shows that Fortress has the power to control prices in the Arbitrating Multiple Requests to Access a Memory Bus Patents Market. As detailed above, VLSI has sought billions of dollars from Intel in connection with the assertion of other patents VLSI obtained from the same prior owner.

F. Third-party Device Authorization Through Limitation of Information Exchanged

303. Fortress, the Uniloc Defendants, INVT, VLSI, Seven Networks, and IXI IP have aggregated patents that purport to cover techniques for securely communicating with a third-party authorizer when requesting authorization to access a network resource. Device authorization is a means to restrict access in a computer network to only authorized, trusted devices to protect data integrity and security. There are a variety of ways to protect data integrity and security in a network, including firewalls, single- or multi-factor authentication, and data masking. Certain device authorization techniques rely on third-party authorizers. Third party authorization can allow, for example, a user to access multiple network resources (e.g., multiple websites) with a single authorization step. Device authorization using third-party authorizers involves several unique challenges, one of which is to prevent unauthorized entities from discovering or spoofing another device's authorization request to the third-party authorizer. Addressing this specific challenge involves limiting the type and format of information exchanged with the third-party authorizer, which reduces the likelihood of another entity discovering or spoofing the authorization request. These limitations often include requirements that the information exchange be limited to

particular user or device identifiers, which may be transmitted in specifically formatted messages (e.g., challenge/response messages). There are no close substitutes for device authorization through the limitation of information exchanged.

304. Fortress, the Uniloc Defendants, INVT, VLSI, Seven Networks, and IXI IP have aggregated patents in an antitrust market for patents purporting to cover techniques for securely communicating with a third-party authorizer when requesting authorization to access a network resource by limiting the type and format of information exchanged with the third-party authorizer, the "Third-party Device Authorization Through Limitation of Information Exchanged Patents Market." The Third-party Device Authorization Through Limitation of Information Exchanged Patents Market constitutes a relevant antitrust market where Fortress (either directly through its PAE subsidiaries or by acting in concert with the PAEs in which it invests) and other holders of patents claiming to read on electronic devices that support device authorization capabilities compete with one another to license patents to suppliers of such devices and supporting software.

305. Among the substitute patents Defendants have aggregated in the Device Authorization Patents Market is U.S. Patent No. 7,900,242, U.S. Patent No. 7,917,620, U.S. Patent No. 9,094,395, U.S. Patent No. 6,212,633, U.S. Patent No. 8,838,976, U.S. Patent No. 8,213,907, and U.S. Patent No. 6,856,616, all of which purport to cover alternative techniques to restrict access to network resources in a computer network.

306. U.S. Patent No. 7,900,242 ("the '242 patent") is titled "Modular Authentication and Authorization Scheme for Internet Protocol" and issued on March 1, 2011. According to its abstract, the '242 patent relates to "[a] system and method for three-party authentication and authorization." Its claims are directed to a three-party device authorization scheme for Internet Protocol version 6, in which the information exchanged between a requesting device and a third-party authorizer is initially limited to challenge and response messages to establish a secure communication session.

307. On its face, the '242 patent is assigned to Nokia Corporation ("Nokia"). On June 9, 2014, Nokia assigned the '242 patent to Inventergy. On October 1, 2014, Inventergy conveyed a

security interest in the '242 patent to DBD Credit Funding LLC, a Fortress affiliate. On April 27, 2017, Inventergy assigned the '242 patent to INVT.

308. U.S. Patent No. 7,917,620 ("the '620 patent") is titled "Communication System" and issued on March 29, 2011. According to its abstract, the '620 patent relates to "[a] security server for use in a telecommunications network [that] is arranged to receive a message; determine whether the message is from a known source or an unknown source and, depending on the result of the determination, modify the message; and forward the message within the telecommunications network." Its claims are directed to a technique for device authorization using a telecom security server. More specifically, the information exchanged between a requesting device and the telecom security server includes a publicly-known user identifier, which allows the security server to determine whether the message is from a known or unknown source.

309. On its face, the '620 patent is assigned to Nokia. On June 9, 2014, Nokia assigned the '620 patent to Inventergy. On October 1, 2014, Inventergy conveyed a security interest in the '620 patent to DBD Credit Funding LLC, a Fortress affiliate. On April 27, 2017, Inventergy assigned the '620 patent to INVT.

310. U.S. Patent No. 9,094,395 ("the '395 patent") is titled "Secure Mechanism to Deliver Mobile Traffic Management Configuration upon Stub Activation on a Mobile Device of a Global Service Discovery Server" and issued on July 28, 2015. According to its abstract, the '395 patent relates to "[a] system, a network, and a mobile device . . . in which the mobile device includes an embedded stub that interacts with a global service discovery server to obtain information about an operating server that handles communications from the mobile device." Its claims are directed to a technique for device authorization using a global service discovery server. In particular, the information exchanged between a requesting device and the global discovery server includes a "stub configuration" that securely provides the global discovery server with information embedded in the requesting device.

311. On its face, the '395 patent is assigned to Seven Networks, Inc. As described above, Fortress gained control of Seven Networks, Inc. in 2015 and thereafter converted it to a limited liability company (that is, Seven Networks). This conversion was executed on July 14, 2015.

312. U.S. Patent No. 6,212,633 ("the '633 patent") is titled "Secure Data Communication over a Memory-mapped Serial Communications Interface Utilizing a Distributed Firewall" and issued on April 3, 2001. According to its abstract, the '633 patent relates to "[a] distributed firewall [that] is utilized in conjunction with a memory-mapped serial communications interface such as that defined by the IEEE 1394 specification to permit secure data transmission between selected nodes over the interface." Its claims are directed to a distributed firewall that restricts access to selected nodes to authorized entities.

313. On its face, the '633 patent is assigned to VLSI Technology, Inc. A name change from VLSI Technology, Inc. to Philips Semiconductors VLSI Inc. was executed on July 2, 1999, and a name change from Philips Semiconductors VLSI Inc. to Philips Semiconductors Inc. ("Philips Semiconductors") was executed on December 20, 1999. On September 28, 2006, Philips assigned the '633 patent to Philips Semiconductors International B.V. A name change from Philips Semiconductors International B.V. to NXP B.V. was executed on September 29, 2006. On December 4, 2017, NXP B.V. assigned the '633 patent to VLSI Technology LLC.

314. U.S. Patent No. 8,838,976 ("the '976 patent") is titled "Web Content Access Using a Client Device Identifier" and issued on September 16, 2014. According to its abstract, the '976 patent relates to "[s]ystems and methods . . . for controlling access to online services." The '976 patent is directed to techniques for generating a hardware device identifier that can be used to authenticate the user.

315. On its face, the '976 patent is assigned to Uniloc Luxembourg. On January 2, 2013, Uniloc Luxembourg assigned the '976 patent to NetAuthority, Inc. ("NetAuthority"). On July 23, 2013, NetAuthority assigned the '976 patent back to Uniloc Luxembourg. On December 30, 2014, Uniloc Luxembourg conveyed a security interest in the '976 patent to Fortress Credit. On May 3, 2018, Uniloc Luxembourg assigned the '976 patent to Uniloc 2017.

316. U.S. Patent No. 8,213,907 ("the '907 patent") is titled "System and Method for Secured Mobile Communication" and issued on July 3, 2012. According to its abstract, the '907 patent relates to "[a] method [to] achieve[] secure mobile communications by authenticating a mobile device seeking communication with a secure server." The '907 patent is directed to device authentication techniques using a digital fingerprint.

317. On its face, the '907 patent is assigned to Uniloc Luxembourg. On January 2, 2013, Uniloc Luxembourg assigned the '907 patent to NetAuthority. On August 27, 2013, NetAuthority assigned the '907 patent back to Uniloc Luxembourg. On December 30, 2014, Uniloc Luxembourg, Uniloc Corporation PTY Limited, and Uniloc USA, Inc. conveyed a security interest in the '907 patent to Fortress Credit. Uniloc Luxembourg assigned its interest in the '907 patent to Uniloc 2017 on May 3, 2018.

318. U.S. Patent No. 6,856,616 ("the '616 patent") is titled "System and Method for Providing Service Provider Configurations for Telephones Using a Central Server in a Data Network Telephony System" and issued on February 15, 2005. According to its abstract, the '616 patent relates to "[a] system and method for providing service provider configured telephone service to a user of a data network telephone." The '616 patent is directed to methods for a device to identify itself to a server and receive configuration data based on that identity.

319. On its face, the '616 patent is assigned to 3Com Corp. On April 28, 2010, in connection with a merger, 3Com Corp. assigned the '616 patent to HP. Effective October 10, 2011, HP assigned the '616 patent to HP Development, and on October 27, 2015, HP Development assigned the '616 patent to HP Enterprise Development. On May 16, 2017, HP Enterprise Development assigned the '616 patent to Uniloc Luxembourg. On May 3, 2018, Uniloc Luxembourg assigned the '616 patent to Uniloc 2017.

320. In addition to the patents discussed immediately above, which are substitutes for one another, the Uniloc Defendants and IXI IP have several additional patents directed to device authorization that are at least complements to, and possibly substitutes for, the '242 patent, the '620 patent, the '395 patent, the '633 patent, the '976 patent, the '907 patent, and the '616 patent.

321. U.S. Patent No. 8,316,421 ("the '421 patent") is titled "System and Method for Device Authentication with Built-in Tolerance" and issued on November 20, 2012. According to its abstract, the '421 patent relates to "[a] system for building tolerance into authentication of a computing device."

322. On its face, the '421 patent is assigned to Uniloc Luxembourg. On January 2, 2013, Uniloc Luxembourg assigned the '421 patent to NetAuthority. On August 27, 2013, NetAuthority assigned the '421 patent back to Uniloc Luxembourg. On December 30, 2014, Uniloc Luxembourg, Uniloc Corporation PTY Limited, and Uniloc USA, Inc. conveyed a security interest in the '421 patent to Fortress Credit. Uniloc Luxembourg assigned its interest in the '421 patent to Uniloc 2017 on May 3, 2018.

323. U.S. Patent No. 7,987,362 ("the '362 patent") is titled "Method and Apparatus for Using Imperfections in Computing Devices for Device Authentication" and issued on July 26, 2011. According to its abstract, the '362 patent relates to "[a] method for authenticating a device including the steps of operating the device to create at least one failure condition; obtaining a measurement based on the at least one failure condition; and, comparing the measurement based on the at least one failure condition with a previously stored measurement based on the at least one failure condition to determine an identity of the device. An apparatus and an article of manufacture for authenticating a device is also disclosed."

324. On its face, the '362 patent is assigned to Uniloc USA. On May 25, 2012, Uniloc USA assigned the '362 patent to Uniloc Luxembourg. On January 2, 2013, Uniloc Luxembourg assigned the '362 patent to NetAuthority. On July 23, 2013, NetAuthority assigned the '362 patent back to Uniloc Luxembourg. On December 30, 2014, Uniloc Luxembourg, Uniloc Corporation PTY Limited, and Uniloc USA conveyed a security interest in the '362 patent to Fortress Credit. On May 3, 2018, Uniloc Luxembourg assigned the '362 patent to Uniloc 2017.

325. U.S. Patent No. 9,286,466 ("the '466 patent") is titled "Registration and Authentication of Computing Devices Using a Digital Skeleton Key" and issued on March 15, 2016. According to its abstract, the '466 patent relates to "[a] method for registering a computing

device to a user account using at least one user-selected fingerprintable device externally accessible to the computing device including transmitting a registration information request to the computing device, receiving at least one device fingerprint of the at least one user-selected fingerprintable device accessible by the computing device, and primary identification data of the computing device, generating a skeleton key, recording the primary identification data, and associating the skeleton key and the primary identification data with the user account."

326. On its face, the '466 patent is assigned to Uniloc Luxembourg. Upon issuance, the '466 patent was subject to the December 2014 security interest Uniloc Luxembourg conveyed to Fortress Credit. On May 3, 2018, Uniloc Luxembourg assigned the '466 patent to Uniloc 2017.

327. U.S. Patent No. 7,934,250 ("the '250 patent") is titled "Method and Apparatus for Using Performance and Stress Testing on Computing Devices for Device Authentication" and issued on April 26, 2011. According to its abstract, the '250 patent relates to "[a] method for authenticating a device including the steps of measuring at least one performance parameter of the device to obtain a measurement; and comparing the measurement of the at least one performance parameter with a previously stored measurement of the at least one performance parameter to determine an identity of the device. An apparatus and an article of manufacture for authenticating a device is also disclosed."

328. On its face, the '250 patent is assigned to Uniloc USA. On May 25, 2012, Uniloc USA assigned the '250 patent to Uniloc Luxembourg. On January 2, 2013, Uniloc Luxembourg assigned the '250 patent to NetAuthority. On July 23, 2013, NetAuthority assigned the '250 patent back to Uniloc Luxembourg. On December 30, 2014, Uniloc Luxembourg, Uniloc Corporation PTY Limited, and Uniloc USA conveyed a security interest in the '250 patent to Fortress Credit. On May 3, 2018, Uniloc Luxembourg assigned the '250 patent to Uniloc 2017.

329. U.S. Patent No. 9,578,502 ("the '502 patent") is titled "Device Authentication Using Inter-person Message Metadata" and issued on February 21, 2017. According to its abstract, the '502 patent relates to "[a] device authentication server [that] authenticates a remotely located device using unique data associated with the user of the device stored on a remotely located server

that has an established relationship with the device, such as client logic installed on the device and authentication data of the user stored on the device," where "[t]he unique data can be unique metadata associated with inter-person messages."

330. On its face, the '502 patent is assigned to Uniloc Luxembourg. Upon issuance, the '502 patent was subject to the December 2014 security interest Uniloc Luxembourg, Uniloc Corporation PTY Limited, and Uniloc USA conveyed to Fortress Credit. On May 3, 2018, Uniloc Luxembourg assigned the '502 patent to Uniloc 2017.

331. U.S. Patent No. 8,695,068 ("the '068 patent") is titled "Device Authentication Using Display Device Irregularity" and issued on April 8, 2014. According to its abstract, the '068 patent relates to "[a] device authentication server [that] authenticates a remotely located device using data representing pixel irregularities of a display of the device."

332. On its face, the '068 patent is assigned to Uniloc Luxembourg. On December 30, 2014, Uniloc Luxembourg, Uniloc Corporation PTY Limited, and Uniloc USA conveyed a security interest in the '068 patent to Fortress Credit. On May 3, 2018, Uniloc Luxembourg assigned the '068 patent to Uniloc 2017.

333. U.S. Patent No. 9,143,496 ("the '496 patent") is titled "Device Authentication Using Device Environment Information" and issued on September 22, 2015. According to its abstract, the '496 patent relates to "[a] device authentication server [that] authenticates a remotely located device using a detailed history of movement of the device."

334. On its face, the '496 patent is assigned to Uniloc Luxembourg. Upon issuance, the '496 patent was subject to the December 2014 security interest Uniloc Luxembourg, Uniloc Corporation PTY Limited, and Uniloc USA conveyed to Fortress Credit. On May 3, 2018, Uniloc Luxembourg assigned the '496 patent to Uniloc 2017.

335. U.S. Patent No. 8,881,280 ("the '280 patent") is titled "Device-specific Content Delivery" and issued on November 4, 2014. According to its abstract, the '280 patent relates to the protection of devices within a user's "device-sphere," in which "[d]evices of an individual's device-sphere recognize risky or undesirable behavior requested by devices outside of the device-

sphere and allow the user to prevent the behavior. The user's decision is stored and used to protect all devices of the user's device-sphere from similar risky behavior from the outside devices."

336. On its face, the '280 patent is assigned to Uniloc Luxembourg. On December 30, 2014, Uniloc Luxembourg, Uniloc Corporation PTY Limited, and Uniloc USA conveyed a security interest in the '280 patent to Fortress Credit. On May 3, 2018, Uniloc Luxembourg assigned the '280 patent to Uniloc 2017.

337. U.S. Patent No. 7,039,033 ("the '033 patent") is titled "System, Device and Computer Readable Medium for Providing a Managed Wireless Network Using Short-range Radio Signals" and issued on May 2, 2006. According to its abstract, the '033 patent relates to "[a] system, a wireless hand-held device, and software component for accessing information responsive to short-range radio signals." Its claims are directed to techniques for authorizing a device to receive network services based on its IP address by translating its IP address using another device.

338. On its face, the '033 patent is assigned to IXI Mobile (Israel) Ltd. On November 28, 2001, a change of name was executed from IXI Mobile (Israel) Ltd. to IXI R&D. On June 5, 2014, IXI R&D assigned the '033 patent to IXI IP. That same day, IXI IP conveyed a security interest in the '033 patent to Fortress Credit. On September 11, 2014, Fortress Credit Co. DBD LLC assigned its interest in the '033 patent to FCO V CLO Transferor LLC, another Fortress subsidiary.

339. U.S. Patent No. 7,295,532 ("the '532 patent") is titled "System, Device and Computer Readable Medium for Providing Networking Services on a Mobile Device" and issued on November 13, 2007. According to its abstract, the '532 patent relates to "[a] system, device and computer readable medium that monitors and reconfigures a LAN by a WAN operator." Its claims, like those of the '033 patent, are directed to techniques for authorizing a device to receive network services based on its IP address by translating its IP address using another device.

340. On its face, the '532 patent is assigned to IXI R&D. On June 5, 2014, IXI R&D assigned the '532 patent to IXI IP. That same day, IXI IP conveyed a security interest in the '532

patent to Fortress Credit. On September 11, 2014, Fortress Credit Co. DBD LLC assigned its interest in the '532 patent to FCO V CLO Transferor LLC.

341. Defendants' aggregation of patents in the Third-party Device Authorization Through Limitation of Information Exchanged Patents Market (including at least seven substitute patents and ten complementary and/or substitute patents) has reduced competition in that market, leading to inflated royalties and decreased licensing output. For example, the '620 patent purports to cover an authorization method where a requesting device transmits a publicly-known user identifier to establish secure communication. The '395 patent meanwhile purports to cover an authorization method in which the requesting device transmits private configuration data to establish secure communication. Using a publicly-known user identifier to establish secure communication is a substitute for using private configuration data, and vice versa. When the '620 and '395 patents were owned by different entities, a party wishing to use one of these potential substitute technologies would be able to take advantage of competition between the owners of these patents when attempting to secure a license. But because of Defendants' unlawful aggregation of patents, Defendants now control both substitute technologies, making such competition impossible.

342. That lessening of competition is reflected by the evidence of supracompetitive royalties sought by Defendants. The prior owners of the patents Defendants have aggregated in the Third-party Device Authorization Through Limitation of Information Exchanged Patents Market never asserted any of these patents because they would not have been able to obtain royalties sufficient to justify the cost of assertion absent the market power created by the Fortress-led aggregation scheme and the resulting elimination of competition. Likewise, the prior owners would not have transferred the aggregated patents if they could have licensed the patents for the amounts that Defendants have either received or seek in litigation. VLSI, the Uniloc Defendants, and IXI IP have pursued litigation based on these patents.

343. As described above, HP and HP Development, former owners of the '616 patent, had previously engaged in litigation of other patents. Likewise, NXP, the former owner of the '633 patent had previously engaged in litigation of other patents.

344. Nokia Corporation, the former assignee of the '242 patent and the '620 patent, has asserted other patents against other parties, including at least the following (a group that includes several assertions against Apple):

- *Nokia Corporation et al. v. Kyocera Wireless Corp.*, No. 2-04-cv-00076 (E.D. Tex.);
- *Nokia Corporation v. Kyocera Wireless Corp.*, No. 2-04-cv-00077 (E.D. Tex.);
- *Nokia Corporation v. Kyocera Wireless Corp.*, No. 2-04-cv-00078 (E.D. Tex.);
- *Nokia Corporation v. Apple Inc.*, No. 1-09-cv-00791 (D. Del.);
- *Nokia Corporation v. Apple Inc.*, No. 1-09-cv-01002 (D. Del.);
- *Nokia Corporation v. Apple Inc.*, No. 3-10-cv-00249 (W.D. Wis.);
- *Nokia Corporation v. Apple Inc.*, No. 1-11-cv-00015 (D. Del.);
- *Nokia Corporation et al. v. Apple Inc.*, No. 1-11-cv-00259 (D. Del.);
- *Nokia Corporation et al. v. HTC Corporation et al.*, No. 1-12-cv-00549 (D. Del.);
- *Nokia Corporation et al. v. HTC Corporation et al.*, No. 1-12-cv-00550 (D. Del.);
- *Nokia Corporation et al. v. HTC Corporation et al.*, No. 1-12-cv-00551 (D. Del.);
- *Nokia Corporation et al. v. ViewSonic Corporation*, No. 1-12-cv-00552 (D. Del.);
- *Nokia Corporation et al. v. ViewSonic Corporation*, No. 1-12-cv-00553 (D. Del.);
- *Nokia Corporation et al. v. ViewSonic Corporation*, No. 1-12-cv-00554 (D. Del.);
- *Nokia Corp, et al. v. BUCA Inc.*, No. 3-01-cv-02613 (N.D. Tex.); and
- *Nokia Corporation et al. v. HTC Corporation et al.*, No. 3-13-cv-01231 (S.D. Cal.).

345. Nokia's 2014 annual report stated that for one of its divisions, Nokia Technologies, its "revenue was mainly attributable to income from intellectual property" based on an "established patent licensing program."

346. On June 28, 2018, VLSI, under the control of Fortress, sued Intel in the District of Delaware, claiming that Intel products using Intel On-Chip System Fabric, including various Intel chipsets, infringe the '633 patent.[98] VLSI also asserted four additional patents. A year into the case, VLSI stated that its damages claim would be for billions of dollars. [redacted]. In addition, VLSI's demand was far higher than market valuations for substitute patents in this market. As substitute patents in the same relevant market as the '633 patent, the purchase price of these patents serves as a reliable proxy for the pre-aggregation value of the '633 patent. Inventergy acquired the substitute '242 and '620 patents from Nokia for far less. As described above, Inventergy disclosed that it had acquired 740 patents from Nokia, Huawei, and Panasonic for up-front payments totaling $10 million with an obligation to make minimum payouts of $20 million. Further, after acquiring the '242 and '620 patents, Inventergy's market capitalization was $15 million. Even assuming that all the value of those acquisitions and of Inventergy as a company was attributable to just one of the '242 or '620 patents, that amount—either $30 million in purchase costs or $15 million—would be a fraction of the demands that VLSI and Uniloc have made. The value of the '633 patent had not changed since its acquisition, but what had changed was that the '633 patent was now aggregated under Fortress's control with substitute patents as well as with complementary patents. Further, by seeking such outsized damages for the '633 patent along with four other patents, VLSI signaled its belief that the '633 patent represents a patent of significant importance in this market such that it would enable them to extract such a supracompetitive royalty.

[98] *VLSI Tech. LLC v. Intel Corp.*, No. 1:18-cv-00966 (D. Del. Jan. 28, 2018).

347. In January 2020, following an unfavorable claim construction ruling, and pursuant to the Court's order requiring election of a reduced number of patent claims across the case, VLSI elected claims from the other four patents but none from the '633 patent. Subsequently, the previously asserted independent claims of the '633 patent were held unpatentable in an *inter partes* review proceeding.

348. On April 3, 2017, Uniloc USA and Uniloc Luxembourg, under the control of Fortress, sued Apple in the Eastern District of Texas, claiming that mobile devices such as iPhones that use software that incorporates Apple's "Frequent Locations" feature infringe the '976 patent.[99] Defendants Uniloc USA and Uniloc Luxembourg also accused Apple of infringing two additional patents. The case was transferred to the Northern District of California, and the plaintiffs ultimately voluntarily dismissed the '976 patent from the case.

349. On October 8, 2018, Uniloc 2017, under the control of Fortress, sued Apple in the Western District of Texas, claiming that mobile devices such as iPhones, iPads, and Apple Watches that include telephone functionality infringe the '616 patent because the patent allegedly covers method of granting access privileges to a mobile device based on that device's "part number" and a configuration associated therewith.[100] Uniloc 2017 voluntarily dismissed the case just over a month later. That same day, Uniloc 2017 filed another case again alleging that the same Apple devices infringe the '616 patent.[101] The case has been transferred to the Northern District of California, where it is currently pending.

350. Apple sought Uniloc's permission to disclose (under seal) its damages estimate for Apple's alleged infringement of the '616 patent, as well as the financial terms of Uniloc's purchase of the patent; however, Uniloc refused that consent and opposed Apple's request (as did Fortress) for the court to modify the protective order in that case to allow the information to be used here.[102]

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[99] *Uniloc USA, Inc. v. Apple Inc.*, No. 2:17-cv-00258 (E.D. Tex. Apr. 3, 2017).
[100] *Uniloc 2017 LLC v. Apple Inc.*, No. 1:18-cv-00851 (W.D. Tex. Oct. 8, 2018).
[101] *Uniloc 2017 LLC v. Apple Inc.*, No. 1:18-cv-00989 (W.D. Tex. Nov. 18, 2018), subsequently transferred as No. 3:19-cv-01905 (N.D. Cal.) (JD).
[102] *Uniloc 2017 LLC et al. v. Apple Inc.*, No. 3:19-cv-01905 (N.D. Cal. Jan. 29, 2021), Dkts. 170, 171.

The court denied Apple's request.[103] Uniloc's refusal and its and Fortress's opposition to Apple's request support an inference that the information at issue would be helpful in showing a significant disparity between the terms on which Uniloc acquired the '616 patent and the damages it now seeks for that patent.

351. Less than two weeks after IXI IP conveyed security interests in the '033 and '532 patents to Fortress Credit, IXI IP began to sue companies based on the patents. In 2014, IXI IP brought three lawsuits, asserting the same four patents in each case, including the '033 and '532 patents:

- *IXI Mobile (R&D) Ltd. et al. v. Samsung Electronics Co., Ltd. et al.*, No. 1:14-cv-04355 (S.D.N.Y.), subsequently transferred as No. 4:15-cv-03752 (N.D. Cal.) (HSG);
- *IXI Mobile (R&D) Ltd. et al. v. Blackberry Limited et al.*, No. 1:14-cv-04428 (S.D.N.Y.), subsequently transferred as No. 4:15-cv-03754 (N.D. Cal.) (HSG); and
- *IXI Mobile (R&D) Ltd. et al. v. Apple, Inc.*, No. 1:14-cv-07954 (S.D.N.Y.), subsequently transferred as No. 4:15-cv-03755 (N.D. Cal.) (HSG).

352. Apple sought IXI's permission to disclose (under seal) its damages estimates for Apple's alleged infringement of the '033 and '532 patents, as well as the financial terms of IXI's acquisitions of the patents; however, IXI refused that consent and opposed Apple's request for the court to modify the protective order in that case to allow the information to be used here.[104] The court denied Apple's request.[105] IXI's refusal and its opposition to Apple's request support an inference that the information at issue would be helpful in showing a significant disparity between the terms on which IXI acquired the '033 and '532 patents and the damages it now seeks for those patents.

353. In June 2015, Apple and Samsung filed petitions for *inter partes* review, challenging the validity of each asserted claim of the patents at issue. In November 2015, the

[103] *Uniloc 2017 LLC et al. v. Apple Inc.*, No. 3:19-cv-01905 (N.D. Cal. Feb. 17, 2021), Dkt. 174.
[104] *Apple Inc. v. IXI IP, LLC et al.*, No. 4-19-cv-06769-HSG (N.D. Cal. Feb. 10, 2021), Dkt. 108.
[105] *Apple Inc. v. IXI IP, LLC et al.*, No. 4-19-cv-06769-HSG (N.D. Cal. Feb. 11, 2021), Dkt. 109.

Court stayed the litigations pending *inter partes* review. The PTAB instituted review of all challenged claims of the '033 patent and all but one challenged claim of the '532 patent.[106] In December 2016, the PTAB found all instituted claims unpatentable.[107] Additional details regarding IXI IP's efforts to obtain additional claims through reexamination for assertion in the litigation against Apple are discussed in paragraphs 137-138 above. Ultimately, the actions were dismissed following joint stipulations of dismissal without prejudice.

354. Intel and Apple have been injured by the elimination of competition resulting from Defendants' aggregation of patents in the Third-party Device Authorization Through Limitation of Information Exchanged Patents Market. Specifically, by eliminating competition, this aggregation positioned Defendants to seek supracompetitive royalties that the prior patent holders were unable to seek because of the competitive constraints they faced. Because they have refused to capitulate to exorbitant royalty demands, Intel and Apple have been injured by Fortress, VLSI, the Uniloc Defendants, and IXI IP having targeted Intel and Apple as part of their litigation based on these patents. Moreover, Apple and Intel have been injured as a result of the ongoing threat that Defendants will continue to assert patents in the Third-party Device Authorization Through Limitation of Information Exchanged Patents Market against them.

355. The supracompetitive licensing royalties Fortress's PAEs have sought are direct evidence of Defendants' market power and the anticompetitive effects that have resulted from their anticompetitive patent aggregation scheme. For example, VLSI has sought exorbitant royalties of Intel, even though the prior owners of the patents, owners with much experience in asserting patents, made no similar attempt to enforce the patents. Fortress (through its PAEs) has been able to acquire patents and then, through the benefit of its anticompetitive scheme, seek inflated

[106] *Samsung Elecs. v. IXI IP, LLC*, IPR2015-01444, Paper No. 8 (PTAB Dec. 30, 2015); *Samsung Elecs. v. IXI IP, LLC*, IPR2015-01443, Paper No. 8 (PTAB Dec. 30, 2015). In response to a separate petition from Apple and Samsung to review claims of the '532 patent—claims that, except for one, the PTAB ultimately found unpatentable in IPR2015-01443 based on different unpatentability grounds—the PTAB denied instituting *inter partes* review. *See Samsung Elecs. v. IXI IP, LLC*, IPR2015-01442, Paper No. 8 (PTAB Dec. 30, 2015).

[107] *Samsung Elecs. v. IXI IP, LLC*, IPR2015-01444, Paper No. 27 (PTAB Dec. 21, 2016); *Samsung Elecs. v. IXI IP, LLC*, IPR2015-01443, Paper No. 27 (PTAB Dec. 21, 2016).

royalties from licensees that reflect the competition that has been eliminated through Defendants' patent aggregation and far exceeds the actual value of the patents based on their technical and commercial merits.

356. Defendants' demands show that Fortress has the power to control prices in the Third-party Device Authorization Through Limitation of Information Exchanged Patents Market. As detailed above, Fortress-controlled VLSI has sought billions of dollars from Intel and Fortress-controlled Uniloc 2017 has sought hundreds of millions of dollars from Apple.

G. Generating Alerts Based on Blood Oxygen Level

357. Health monitoring enables certain electronic devices, such as wearable devices, smartphones, medical devices, or the like, to monitor and process patient data from sensors. There are an increasing number of tasks that electronic devices can perform to monitor and provide information about a wearer's movement and physical condition. These include tracking the number of steps a user takes, the number of calories a user burns, the user's heart rate, and the user's temperature. In addition, such devices may have the capability to track a user's blood oxygen level, i.e., the amount of oxygen circulating in the blood. Measuring blood oxygen level can be relevant to analyzing sleep and also to monitoring health conditions such as asthma, heart disease, and chronic obstructive pulmonary disease. An electronic device can use techniques to track and record blood oxygen level to aid in monitoring overall health. In addition to such more passive tracking techniques, electronic devices can also use techniques to enable alerting the user and/or third parties so that further intervention may take place when a user's blood oxygen level is determined to be irregular (e.g., outside of a target range). Health monitoring sensors are commonly used in such electronic devices, and there is no close substitute for the functionality for generating alerts based on blood oxygen level.

358. Fortress and the Uniloc Defendants have aggregated patents in an antitrust market for patents purporting to cover generating alerts based on blood oxygen level, the "Generating Alerts Based on Blood Oxygen Level Patents Market." The Generating Alerts Based on Blood Oxygen Level Patents Market constitutes a relevant antitrust market where Fortress (either directly

through its PAE subsidiaries or by acting in concert with the PAEs in which it invests) and other holders of patents claimed to read on electronic devices that support generating alerts based on blood oxygen level capabilities compete with one another to license patents to suppliers of such devices and supporting software.

359. Among the substitute patents Defendants have aggregated in the Generating Alerts Based on Blood Oxygen Level Patents Market are U.S. Patent No. 7,220,220, U.S. Patent No. 6,736,759, and U.S. Patent No. 6,215,403, all of which purport to cover alternative techniques to process patient physiological data received from health monitoring sensors.

360. U.S. Patent No. 7,220,220 ("the '220 patent") is titled "Exercise Monitoring System and Methods" and issued on May 22, 2007. According to its abstract, the '220 patent relates to "[a]n exercise monitoring system which includes an electronic positioning device; a physiological monitor; and a display unit configured for displaying data provided by said electronic positioning device and said physiological monitor." It claims methods for monitoring and reporting health conditions and/or physiological parameters. The claims particularly relate to monitoring a subject's blood oxygen level and providing an alert via a directly connected alarm to indicate when the measured level is not at the selected level.

361. On June 9, 2017, inventors Kevin Schwieger and Jack Stubbs assigned the '220 patent to Paragon Solutions LLC ("Paragon Solutions"). On July 28, 2017, the same inventors entered assignment agreements with Paragon Solutions for the '220 patent and Paragon, that same day, assigned the '220 patent to Red Dragon Innovations LLC ("Red Dragon"). On August 10, 2017, Red Dragon assigned the '220 patent to Defendant Uniloc Luxembourg. On May 3, 2018, Defendant Uniloc Luxembourg assigned the '220 patent to Defendant Uniloc 2017.

362. U.S. Patent No. 6,736,759 ("the '759 patent") is in the same patent family as the '220 patent, is also titled "Exercise Monitoring System and Methods," and issued on May 18, 2004. Similar to the '220 patent, the '759 patent relates to systems for monitoring and reporting health conditions and/or physiological parameters.

363. The '759 patent is assigned on its face to Paragon Solutions. Pursuant to assignments dated June 9, 2017 and July 28, 2017, Paragon Solutions assigned the '759 patent to Red Dragon. On August 10, 2017, Red Dragon assigned the'759 patent to Defendant Uniloc Luxembourg. On May 3, 2018, Defendant Uniloc Luxembourg assigned the '759 patent to Defendant Uniloc 2017.

364. U.S. Patent No. 6,215,403 ("the '403 patent") is titled "Wireless Monitoring System" and issued on April 10, 2001. According to its abstract, the '403 patent relates to "a detection device capable of being coupled to a person for remotely monitoring heart and respiratory functions." It claims a system for monitoring physiological parameters and providing an alert under certain conditions. The claims particularly describe a processor that compares measured blood oxygen levels to a desired level and transmits an alert wirelessly when the measured and desired levels do not match.

365. On its face, the '403 patent is assigned to IBM. On September 26, 2007, IBM assigned the '403 patent to IPG Healthcare 501 Limited ("IPG Healthcare"). On April 10, 2012, IPG Healthcare assigned the '403 patent to Pendragon Networks LLC ("Pendragon Networks"). On January 31, 2018, Pendragon Networks assigned the '403 patent to Defendant Uniloc Luxembourg. On May 3, 2018, Defendant Uniloc Luxembourg assigned the '403 patent to Uniloc 2017 LLC.

366. In addition to the patents discussed immediately above, which are substitutes for one another, the Uniloc Defendants have several additional patents directed to health monitoring that are at least complements to, and possibly substitutes for, the '220 patent, the '759 patent, and the '403 patent.

367. U.S. Patent No. 7,653,508 ("the '508 patent") is titled "Human Activity Monitoring Device" and issued on January 26, 2010. According to its abstract, the '508 patent relates to "[a] method for monitoring human activity using an inertial sensor."

368. U.S. Patent No. 7,690,556 ("the '556 patent") is titled "Step Counter Accounting for Incline" and issued on April 6, 2010. According to its abstract, the '556 patent relates to a step counter system that comprises an accelerometer, step calculation logic, and incline logic.

369. U.S. Patent No. 7,881,902 ("the '902 patent") is titled "Human Activity Monitoring Device" and issued on February 1, 2011. According to its abstract, the '902 patent relates to "[a] method for monitoring human activity using an inertial sensor."

370. U.S. Patent No. 8,712,723 ("the '2723 patent") is titled "Human Activity Monitoring Device" and issued on April 29, 2014. According to its abstract, the '2723 patent relates to "[a] method for monitoring human activity using an inertial sensor."

371. U.S. Patent No. 8,872,646 ("the '646 patent") is titled "Method and System for Waking up a Device Due to Motion" and issued on October 28, 2014. According to its abstract, the '646 patent relates to "waking up [a device in an idle state] when the analysis of the motion indicates a change in the dominant axis of the device and/or a level of acceleration beyond a threshold."

372. The '508 patent, the '556 patent, the '902 patent, the '2723 patent, and the '646 patent are collectively referred to as the "DP Technologies Patents." The DP Technologies Patents are directed to techniques for monitoring human activity using inertial sensors to detect physical motion (e.g., steps).

373. On their faces, the DP Technologies Patents are assigned to DP Technologies, Inc. ("DP Technologies"). On May 17, 2017, DP Technologies assigned the DP Technologies Patents to Uniloc Luxembourg. On May 3, 2018, Uniloc Luxembourg assigned the DP Technologies Patents, except for the '646 patent, to Uniloc 2017.

374. Defendants' aggregation of patents in the Generating Alerts Based on Blood Oxygen Level Patents Market (including at least three substitute patents and five complementary and/or substitute patents) has reduced competition in that market, leading to inflated royalties and decreased licensing output. For example, the '220 and '403 patents each purport to cover techniques for generating alerts when a measured blood oxygen level does not match a target level.

Specifically, the '220 patent purports to cover a method in which the alert is transmitted via a wired connection, whereas the '403 patent purports to disclose a method in which the alert is transmitted wirelessly. These wired and wireless means for generating alerts when a measured blood oxygen level does not match a target level are substitutes for one another. When the '220 and '403 patents were owned by different entities, a party wishing to use one of these potential substitute technologies would be able to take advantage of competition between the owners of these patents when attempting to secure a license. But because of Defendants' unlawful aggregation of patents, Defendants now control each of the substitute technologies, eliminating such competition.

375. That lessening of competition is reflected by the evidence of supracompetitive royalties demanded and received by Defendants. The prior owners would not have transferred the aggregated patents if they could have licensed the patents for the amounts that Defendants have either received or seek in litigation. Defendants have pursued numerous assertions and secured at least four settlements for substantial royalties.

376. Specifically, Uniloc Luxembourg and Uniloc USA and later Uniloc 2017, all under the control of Fortress, began a litigation campaign in 2017 based on the DP Technologies Patents. Between June 2017 and November 2017, Uniloc Luxembourg and Uniloc USA asserted at least one of the DP Technologies Patents in thirteen lawsuits:

- *Uniloc USA, Inc. et al. v. Apple Inc.*, No. 2:17-cv-00470 (E.D. Tex.), subsequently transferred as No. 4:18-cv-00362 (N.D. Cal.) (PJH);
- *Uniloc USA, Inc. et al. v. Apple Inc.*, No. 2:17-cv-00469 (E.D. Tex.), subsequently transferred as No. 4:18-cv-00361 (N.D. Cal.) (PJH);
- *Uniloc USA, Inc. et al. v. Apple Inc.*, No. 2:17-cv-00522 (E.D. Tex.), subsequently transferred as No. 4:18-cv-00364 (N.D. Cal.) (PJH);
- *Uniloc USA, Inc. et al. v. Samsung Electronics America, Inc. et al.*, No. 2:17-cv-00652 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Samsung Electronics America, Inc. et al.*, No. 2:17-cv-00651 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Samsung Electronics America, Inc. et al.*, No. 2:17-cv-00650 (E.D. Tex.);

- *Uniloc USA Inc et al. v. LG Electronics U.S.A., Inc. et al.*, No. 4:17-cv-00830 (N.D. Tex.);
- *Uniloc USA Inc et al. v. LG Electronics U.S.A., Inc. et al.*, No. 4:17-cv-00832 (N.D. Tex.), subsequently transferred as No. 4:18-cv-02918 (N.D. Cal.);
- *Uniloc USA Inc et al. v. LG Electronics U.S.A., Inc. et al.*, No. 4:17-cv-00829 (N.D. Tex.), subsequently transferred as No. 4:18-cv-02917 (N.D. Cal.);
- *Uniloc USA, Inc et al v. HTC America, Inc.*, No. 2:17-cv-01629 (W.D. Wash.), subsequently consolidated under No. 2:17-cv-01558 (W.D. Wash.);
- *Uniloc USA, Inc. et al. v. Huawei Device USA, Inc. et al.*, No. 2:17-cv-00737 (E.D. Tex.);
- *Uniloc USA, Inc. et al. v. Huawei Device USA, Inc. et al.*, No. 2:17-cv-00736 (E.D. Tex.); and
- *Uniloc USA, Inc. et al. v. Huawei Device USA, Inc. et al.*, No. 2:17-cv-00746 (E.D. Tex.).

377. Of the thirteen lawsuits based on the DP Technologies Patents, at least four resulted in settlements:

- *Uniloc USA, Inc. et al. v. Samsung Electronics America, Inc. et al.*, No. 2:17-cv-00652 (E.D. Tex.) and *Uniloc USA, Inc. et al. v. Samsung Electronics America, Inc. et al.*, No. 2:17-cv-00650 (E.D. Tex.) were dismissed pursuant to settlements in May 2020.
- *Uniloc USA, Inc. et al. v. Huawei Device USA, Inc. et al.*, No. 2:17-cv-00737 (E.D. Tex.) and *Uniloc USA, Inc. et al. v. Huawei Device USA, Inc. et al.*, No. 2:17-cv-00746 (E.D. Tex.) were dismissed pursuant to settlements in July 2019.

The details of the parties' settlement agreements are not publicly available.

378. Of the nine other lawsuits based on the DP Technologies Patents, three were voluntarily dismissed, and six are stayed pending *inter partes* review.

379. Apple has been injured by the elimination of competition resulting from Fortress and the Uniloc Defendants' aggregation of patents in the Generating Alerts Based on Blood Oxygen Level Patents Market. Specifically, by eliminating competition, this aggregation positioned Fortress and the Uniloc Defendants to seek supracompetitive royalties that the prior patent holders were unable to demand because of the competitive constraints they faced. Because it has refused to capitulate to exorbitant royalty demands, Apple has been injured by Fortress and

the Uniloc Defendants having targeted Apple as part of their litigation campaign based on the DP Technologies Patents and the '759 patent. Moreover, Apple and Intel have been injured as a result of the ongoing threat that Defendants will continue to assert patents in the Generating Alerts Based on Blood Oxygen Level Patents Market against them.

380. Specifically, in June 2017, Uniloc USA and Uniloc Luxembourg filed three lawsuits against Apple in which it asserted that Apple devices infringe at least one patent in the Generating Alerts Based on Blood Oxygen Level Patents Market. On June 2, 2017, Uniloc USA and Uniloc Luxembourg sued Apple, asserting that Apple's iPhones, iPads, and Watches infringe the '556 patent.[108] Uniloc USA and Uniloc Luxembourg also asserted two additional patents. As described above, the '556 patent assertion was meritless: Fullpower, the prior owner of the '556 patent, concluded that the accelerometers in fitness trackers like Apple's "do not monitor how much the foot is going up and how much is coming down," as required by the claims.[109] Moreover, nearly every claim of the '556 patent was found invalid as indefinite in Uniloc USA and Uniloc Luxembourg's case against Samsung.[110]

381. In their March 19, 2018 Rule 3-8 Damages Contentions for the '556 patent, Uniloc USA and Uniloc Luxembourg provided that based on their "current knowledge, understanding, and belief as to the facts and information available to them as of the date of these Contentions, Plaintiffs identify the following categories of damages that they are seeking" and indicated that damages for Apple's infringement of the '556 patent are between $375,273,911 and $731,916,202. This demand far exceeds the $33.6 million paid by Fortress in March 2018 for substantially all of Uniloc Luxembourg's assets, including its portfolio with the '556 patent. The value of the '556 patent had not changed in the interim, but what had changed was that the '556 patent was now aggregated under Fortress's control with substitute patents as well as with complementary patents.

[108] *Uniloc USA, Inc. et al. v. Apple Inc.*, No. 2:17-cv-00470 (E.D. Tex.), subsequently transferred as No. 4:18-cv-00362 (N.D. Cal.) (PJH).
[109] *Uniloc USA, Inc. v. Apple Inc.*, 4:18-cv-00362 (N.D. Cal.) (PJH), Dkt. 120-2.
[110] Claim Construction Memorandum & Order, *Uniloc USA, Inc. v. Samsung Elecs. America, Inc.*, No. 2:17-cv-00651 (E.D. Tex. Oct. 24, 2018), Dkt. 77.

Further, by seeking such outsized damages, the Uniloc Defendants signaled their belief that the '556 patent represents a patent of significant importance in this market such that it would enable them to extract such supracompetitive royalties. The case is stayed pending *inter partes* review related to Case Nos. 4:18-cv-00361 and 4:18-cv-00364 (N.D. Cal.), two other cases, detailed below, in which Uniloc Luxembourg and Uniloc USA assert patents in the Generating Alerts Based on Blood Oxygen Level Patents Market.

382. On June 2, 2017, the same day Uniloc Luxembourg and Uniloc USA sued Apple for infringing the '556 patent, Uniloc Luxembourg and Uniloc USA sued Apple for infringing another patent in the Generating Alerts Based on Blood Oxygen Level Patents Market—the '646 patent.[111] Uniloc Luxembourg and Uniloc USA alleged that Apple products that implement "Raise to Wake" functionality infringe the '646 patent. In their March 19, 2018 Rule 3-8 contentions, Uniloc Luxembourg and Uniloc USA claim that they are again entitled to between $1.41 and $2.75 in damages per Apple device, resulting in total damages between approximately $167 million and $326 million for the '646 patent. This demand far exceeds the $33.6 million paid by Fortress in March 2018 for substantially all of Uniloc Luxembourg's assets, including its portfolio with patents that are complements for the '646 patent (such as the '556, '508, '2723, and the '902 patents). As complementary patents in the same relevant market as the '646 patent, the purchase price of these patents serves as a reliable proxy for the pre-aggregation value of the '646 patent. The value of the '646 patent had not changed in the interim, but what had changed was that the '646 patent was now aggregated under Fortress's control with substitute patents as well as with complementary patents. Further, by seeking such outsized damages, the Uniloc Defendants signaled their belief that the '646 patent is of significant importance in this market such that it would enable them to extract such supracompetitive royalties.

383. After the case in which the '646 patent was asserted was transferred to the Northern District of California, it was stayed pending *inter partes* review. In a final written decision issued

[111] *Uniloc USA, Inc. et al. v. Apple Inc.*, No. 2:17-cv-00469 (E.D. Tex.), subsequently transferred as No. 4:18-cv-00361 (N.D. Cal.) (PJH).

on May 21, 2019, the PTAB concluded that all challenged claims of the '646 patent are unpatentable.[112] The case remains stayed pending appellate review of the PTAB's decision.

384. On June 30, 2017, less than one month after Uniloc Luxembourg and Uniloc USA asserted the '556 and '646 patents, the parties sued Apple for a third time, alleging that Apple devices infringe three additional patents in the Generating Alerts Based on Blood Oxygen Level Patents Market—the '508, the '2723, and the '902 patents.[113] In their Rule 3-8 contention, Uniloc USA and Uniloc Luxembourg again contend that they are entitled to between $1.41 and $2.75 in damages per Apple device, for total damages between approximately $375 million and $731 million for each allegedly infringed patent. These demands far exceed the $33.6 million paid by Fortress in March 2018 for substantially all of Uniloc Luxembourg's assets, including its portfolio with the '508, the '2723, and the '902 patents. The value of the '508, the '2723, and the '902 patents had not changed in the interim, but what had changed was that the '508, the '2723, and the '902 patents were now aggregated under Fortress's control with substitute patents as well as with complementary patents. Further, by seeking such outsized damages, the Uniloc Defendants signaled their belief that the '508, the '2723, and the '902 patents represent patents of significant importance in this market such that they would enable the Uniloc Defendants to extract such supracompetitive royalties.

385. After the case with the '508, the '2723, and the '902 patents was transferred to the Northern District of California, it was stayed pending *inter partes* review. The PTAB found all challenged claims of the '508 patent unpatentable,[114] except for one claim for which it declined to institute *inter partes* review.[115] Similarly, the PTAB found all challenged claims of the '2723 patent unpatentable,[116] except for two claims for which it declined to institute *inter partes*

[112] *Apple Inc. v. Uniloc 2017 LLC*, IPR2018-00289, Paper No. 22 (PTAB May 21, 2019).
[113] *Uniloc USA, Inc. et al. v. Apple Inc.*, No. 2:17-cv-00522 (E.D. Tex.), subsequently transferred as No. 4:18-cv-00364 (N.D. Cal.) (PJH).
[114] *Apple Inc. v. Uniloc 2017 LLC*, IPR2018-00387, Paper No. 21 (PTAB June 17, 2019).
[115] *Apple Inc. v. Uniloc Luxembourg SA*, IPR2018-01026, Paper No. 9 (PTAB Oct. 18, 2018).
[116] *Apple Inc. v. Uniloc 2017 LLC*, IPR2018-00389, Paper No. 20 (PTAB June 17, 2019).

review.[117] And the PTAB found all but one challenged claim of the '902 patent unpatentable.[118] The case remains stayed pending appellate review of the PTAB's decisions.

386. On October 20, 2017, Uniloc USA and Uniloc Luxembourg sued Apple in the Eastern District of Texas, alleging that devices that use Apple's watchOS infringe the '759 patent,[119] another patent in the Generating Alerts Based on Blood Oxygen Level Patents Market. The case was stayed pending *inter partes* review proceedings. On April 12, 2019, the PTAB concluded that all claims of the '759 patent were unpatentable.[120] The case remains stayed pending appellate review of the PTAB's decision.

387. When Paragon Solutions owned the '759 patent, it asserted the '759 patent against Timex Corporation in 2006.[121] But for more than a decade, Paragon Solutions did not assert the '759 patent against Apple and, ultimately, transferred it to Uniloc Luxembourg in 2017.

388. The supracompetitive licensing royalties Fortress's PAEs have sought and obtained are direct evidence of its market power. For example, Fortress and the Uniloc Defendants have been able to coerce several parties (at least Samsung Electronics America and Huawei Device USA) to license its patents in the Generating Alerts Based on Blood Oxygen Level Patents Market even though the patents' prior owner did not seek to enforce them. Likewise, the damages demands made of Apple far exceed the amounts that the original owner of one of the patents in the Generating Alerts Based on Blood Oxygen Level Patents Market (i.e., the '403 patent, which was assigned to IBM on its face) has sought for other of its patents. [redacted]. Fortress (through its PAEs) has been able to acquire patents and then, through the benefit of its anticompetitive scheme, extract inflated royalties from licensees that reflect the competition that has been eliminated through

[117] *Apple Inc. v. Uniloc Luxembourg SA*, IPR2018-01027, Paper No. 8 (PTAB Oct. 18, 2018).
[118] *Apple Inc. v. Uniloc 2017 LLC*, IPR2018-00424, Paper No. 21 (PTAB July 16, 2019); *Apple Inc. v. Uniloc 2017 LLC*, IPR2018-01028, Paper No. 18 (PTAB Nov. 5, 2019).
[119] *Uniloc USA, Inc. et al v. Apple Inc.*, No. 2:17-cv-00708 (E.D. Tex.).
[120] *Apple Inc. v. Uniloc 2017 LLC*, IPR2018-00294, Paper No. 20 (PTAB Apr. 12, 2019).
[121] *Paragon Solutions, LLC v. Timex Corporation*, No. 06-cv-00677 (S.D. OH).

Defendants' patent aggregation and far exceeds the actual value of the patents based on their technical and commercial merits.

389. Defendants' demands also show that Fortress has the power to control prices in the Generating Alerts Based on Blood Oxygen Level Patents Market. As detailed above, Fortress-backed entities have sought hundreds of millions of dollars from Apple.

H. MOSFET Channel Fabrication

390. Fortress, the Uniloc Defendants, and VLSI have aggregated patents relating to MOSFET channel fabrication. This corresponds to a part of the semiconductor fabrication process in which nanoscale MOSFET channels are formed on a semiconductor substrate. Modern digital processors include millions or billions of integrated MOSFET devices per chip, each of which includes a respective channel. There are no close substitutes for these fabrication techniques.

391. Fortress, the Uniloc Defendants, and VLSI have aggregated patents in an antitrust market for patents purporting to cover MOSFET channel fabrication techniques, the "MOSFET Channel Fabrication Patents Market." The MOSFET Channel Fabrication Patents Market constitutes a relevant antitrust market where Fortress (either directly through its PAE subsidiaries or by acting in concert with the PAEs in which it invests) and other holders of patents claimed to read on MOSFET channel fabrication techniques compete with one another to license patents to semiconductor device manufacturers.

392. Among the patents Defendants have aggregated in the MOSFET Channel Fabrication Patents Market are U.S. Patent No. 6,995,452, U.S. Patent No. 6,541,319, U.S. Patent No. 6,087,232, U.S. Patent No. 7,183,149, and U.S. Patent No. 7,709,303, which purport to cover alternative techniques to control the etch process used to fabricate nanoscale MOSFET channels.

393. U.S. Patent No. 6,995,452 ("the '452 patent") is titled "MOSFET Device with Nanoscale Channel and Method of Manufacturing the Same" and issued on February 7, 2006. According to its abstract, the '452 patent relates to "an SOI [silicon-on-insulator] MOSFET device with a nanoscale channel that has a source/drain region including a shallow extension region and a deep junction region formed by solid-phase diffusion and a method of manufacturing the SOI

MOSFET device." The '452 patent is directed to controlling channel characteristics of a nanoscale MOSFET transistor by depositing etch masks doped with different impurities.

394. On its face, the '452 patent is assigned to ETRI. On December 26, 2008, ETRI assigned half of its interest in the '452 patent to IPG Electronics 502. On April 10, 2012, ETRI and IPG Electronics 502 assigned the '452 patent to Pendragon Electronics. On January 31, 2018, Pendragon Electronics assigned the '452 patent to Defendant Uniloc Luxembourg. On May 3, 2018, Defendant Uniloc Luxembourg assigned the '452 patent to Defendant Uniloc 2017.

395. U.S. Patent No. 6,541,319 ("the '319 patent") is titled "Method of Manufacturing a Self-Aligned Gate Transistor with P-type Impurities Selectively Implanted Below the Gate, Source and Drain Electrodes" and issued on April 1, 2003. According to its abstract, the '319 patent relates to "a self-aligned gate transistor." Its claims are directed to techniques for manufacturing a self-aligned gate transistor using a dry-etch technique.

396. On its face, the '319 patent is assigned to ETRI. On December 26, 2008, ETRI assigned one half of its interest in the '319 patent to IPG Electronics 502. On April 10, 2012, IPG Electronics 502 and ETRI assigned the '319 patent to Pendragon Electronics. On January 31, 2018, Pendragon Electronics assigned the '319 patent to Uniloc Luxembourg. On May 3, 2018, Uniloc Luxembourg assigned the '319 patent to Uniloc 2017.

397. U.S. Patent No. 6,087,232 ("the '232 patent") is titled "Fabrication Method of Lateral Double Diffused MOS Transistors" and issued on July 11, 2000. According to its abstract, the '232 patent relates to "a method for manufacturing double RESURF (reduced SURface Field) LDMOS (Lateral Diffused Metal Oxide Semiconductor) transistors, on-resistance of double RESURF LDMOS transistors." Its claims are directed to a technique for fabricating a MOSFET using selective tapered etching of a TEOS oxide made of a three-layer structure having different etching rates.

398. On its face, the '232 patent is assigned to ETRI. On December 26, 2008, ETRI assigned one half of its interest in the '232 patent to IPG Electronics 502. On April 10, 2012, IPG Electronics 502 and ETRI assigned the '232 patent to Pendragon Electronics. On January 31,

2018, Pendragon Electronics assigned the '232 patent to Uniloc Luxembourg. On May 3, 2018, Uniloc Luxembourg assigned the '232 patent to Uniloc 2017.

399. U.S. Patent No. 7,183,149 ("the '149 patent") is titled "Method of Manufacturing Field Effect Transistor" and issued on February 27, 2007. According to its abstract, the '149 patent relates to a method of manufacturing a field effect transistor in which "transistors having different threshold voltages can be manufactured without additional mask patterns using the least number of processes." Its claims are directed to a technique for fabricating a transistor by simultaneously etching an insulating layer and a resist pattern using the resist patterns as etch masks.

400. On its face, the '149 patent is assigned to ETRI. On December 26, 2008, ETRI assigned one half of its interest in the '149 patent to IPG Electronics 502. On April 10, 2012, IPG Electronics 502 and ETRI assigned the '149 patent to Pendragon Electronics. On January 31, 2018, Pendragon Electronics assigned the '149 patent to Uniloc Luxembourg. On May 3, 2018, Uniloc Luxembourg assigned the '149 patent to Uniloc 2017.

401. U.S. Patent No. 7,709,303 ("the '303 patent") is titled "Process for Forming an Electronic Device Including a Fin-type Structure" and issued on May 4, 2010. According to its abstract, the '303 patent relates to "forming a semiconductor fin of a first height for a fin-type structure and removing a portion of the semiconductor fin such that the semiconductor fin is shortened to a second height." The '303 patent is directed to controlling channel characteristics of a nanoscale MOSFET transistor by selectively placing etch masks to enable partial removal of semiconductor layers.

402. On its face, the '303 patent is assigned to Freescale. On August 16, 2016, Freescale assigned the '303 patent to Defendant VLSI.

403. Defendants' aggregation of patents in the MOSFET Channel Fabrication Patents Market (including at least five substitute patents) has reduced competition in that market, leading to inflated royalties and decreased licensing output. For example, the '452 and '303 patents each purport to cover techniques for controlling the etch process used to fabricate nanoscale MOSFET channels. Specifically, the '452 patent purports to cover a technique in which the chemical

composition of an etch mask—a temporary patterned layer that operates like a stencil—is selected to control the etch process. On the other hand, the '303 patent purports to disclose a technique in which the physical placement of the etch mask with respect to other MOSFET features is selected to achieve improved process control. Selecting the chemical composition of an etch mask is a substitute for selecting the physical placement of the etch mask, and vice versa. When the '452 and '303 patents were owned by different entities, a party wishing to use one of these potential substitute technologies would be able to take advantage of competition between the owners of these patents when attempting to secure a license. But because of Defendants' unlawful aggregation of patents, Defendants now control each of the substitute technologies, eliminating such competition.

404. That lessening of competition is reflected by the evidence of supracompetitive royalties sought by Defendants. The prior owners of the patents aggregated by Uniloc 2017 and VLSI in the MOSFET Channel Fabrication Patents Market never asserted these patents because they would not have been able to obtain royalties sufficient to justify the cost of assertion absent the market power created by the Fortress-led aggregation scheme and the resulting elimination of competition. As described above, Freescale and ETRI, former owners of the aggregated patents, filed multiple infringement lawsuits, indicating that they are capable and willing to do so in the appropriate circumstances. In particular, when Freescale owned the '303 patent, it never pursued infringement claims against Intel for functionality that then existed in Intel products and that VLSI has later accused of infringement. VLSI filed suit against Intel asserting the '303 patent on October 2, 2017. Among other Intel products, VLSI's complaint accuses the Intel Core i3 of infringement.[122] The Core i3 was introduced in 2010. Given the six-year limitation on damages, the period from the issuance of the '303 patent on May 4, 2010 to October 2011 is one in which Intel paid no royalties for the '303 patent, royalties cannot be obtained from Intel for the '303 patent, and Intel faced no assertion of the '303 patent. But, as described further below, after

[122] *VLSI Tech. LLC v. Intel Corp.*, No. 5:17-cv-05671 (N.D. Cal. Oct. 2, 2017) (BLF), Dkt. 1 ¶ 70.

aggregation and the elimination of competition, VLSI has demanded supracompetitive royalties from Intel and imposed on Intel the cost of defending the assertion of the '303 patent.

405. Likewise, the prior owners would not have transferred the aggregated patents if they could have licensed the patents for the amounts that Defendants have either received or seek in litigation. Defendant VLSI, under the control of Fortress, has pursued a litigation campaign based on certain of these patents.

406. Intel has been injured by the elimination of competition resulting from Defendants' aggregation of patents in the MOSFET Channel Fabrication Patents Market. Specifically, this aggregation positioned Fortress and VLSI to seek supracompetitive royalties that the prior patent holders were unable to seek because of the competitive constraints they faced. Because it has refused to capitulate the exorbitant royalty demands, Intel has been injured by VLSI having targeted Intel for enforcement of the '303 patent. Moreover, Apple and Intel have been injured as a result of the ongoing threat that Defendants will continue to assert patents in the MOSFET Channel Fabrication Patents Market against them.

407. Specifically, as part of the VLSI California Action discussed above, Defendant VLSI (under Fortress's control) alleged that Intel's microprocessor fabrication methods infringed the '303 patent and seven other patents.[123] The damages estimates VLSI has disclosed publicly in connection with its assertion of the eight patents asserted in the VLSI California Action are exorbitant: as discussed above, VLSI disclosed that it would seek $7.1 billion in that suit. Thus, Intel's 10-K for 2020 reports that for the California case in which the '303 patent was asserted, "VLSI estimated its damages to be as high as $7.1 billion, and its complaint further sought enhanced damages, future royalties, attorneys' fees, costs, and interest." Intel sought VLSI's permission to disclose (under seal) VLSI's damages estimate for Intel's alleged infringement of the '303 patent, as well as the financial terms of VLSI's purchase of the patent from NXP (which had merged with Freescale); however, VLSI refused that consent and opposed Intel's request for

[123] *VLSI Tech. LLC v. Intel Corp.*, No. 5:17-cv-05671 (N.D. Cal.) (BLF).

the court to modify the protective order. VLSI's refusal and its opposition to Intel's request support an inference that the information at issue would be helpful in showing a significant disparity between the terms on which VLSI acquired the '303 patent and the damages it now seeks for that patent. Further, by seeking such outsized damages, VLSI signals its belief that the '303 patent represents a patent of significant importance in this market such that it would enable it to extract such a supracompetitive royalty.

408. VLSI's damages demand for the '303 patent significantly exceeds what Freescale sought for this very patent. As discussed above, [redacted]. VLSI's damages demand is also significantly more than Freescale has sought for other of its patents concerning microprocessor features. Specifically, in December 2014, Intel purchased from Freescale for [redacted] a total of 29 patent families, including 13 U.S. patents, for example: U.S. Patent Nos. 6,769,076 (Real-time Processor Debug System); 6,845,419 (Flexible Interrupt Controller that Includes an Interrupt Force Register); 7,248,069 (Method and Apparatus for Providing Security for Debug Circuitry); 5,889,788 (Wrapper Cell Architecture for Path Delay Testing of Embedded Core Microprocessors and Method of Operation); 6,134,675 (Method of Testing Multi-Core Processors and Multi-Core Processor Testing Device); 7,296,137 (Memory Management Circuitry Translation Information Retrieval during Debugging); 7,299,335 (Translation Information Retrieval Transparent to Processor Core); and 8,041,901 (Performance Monitoring Device and Method thereof). And in May 2015, [redacted], including patents such as: U.S. Patent Nos. 5,943,274 (Method and Apparatus for Amplifying a Signal to Produce a Latched Digital Signal); 6,917,555 (Integrated Circuit Power Management for Reducing Leakage Current in Circuit Arrays and Method therefor); 7,200,719 (Prefetch Control in a Data Processing System); 7,638,903 (Power Supply Selection for Multiple Circuits on an Integrated Circuit); and 6,013,571 (Microelectronic Assembly including Columnar Interconnections and Method for Forming Same).

409. Further, VLSI's damages demand for the '303 patent far exceeds the $33.6 million paid by Fortress in March 2018 for the entire Uniloc Luxembourg portfolio, which included the '452, '319, '232, and '149 substitute patents. As substitute patents in the same relevant market as the '303 patent, the purchase price of these patents serves as a reliable proxy for the pre-aggregation value of the '303 patent.

410. In addition, VLSI's $7.1 billion demand for the case with the '303 patent exceeds the $3.3 billion that SoftBank paid to acquire Fortress in its entirety, when it owned the '303 patent and many others, along with numerous other non-patent lines of business. The value of the '303 patent has not changed from these purchase prices, but what has changed is that the '303 patent is now aggregated under Fortress's control with other substitute patents and complementary patents.

411. After the PTAB instituted *inter partes* review proceedings to evaluate the patentability of the claims in the '303 patent (and five other patents asserted in the action), the parties stipulated to a stay of the VLSI California Action in March 2019. Ultimately, the PTAB issued a Final Written Decision finding all challenged claims of the '303 patent unpatentable.[124] Defendant VLSI filed a notice of appeal of the PTAB's decision regarding the '303 patent on January 31, 2020 but voluntarily dismissed the appeal on May 5, 2020.

412. The supracompetitive licensing royalties Fortress's PAEs have sought are evidence of Defendants' market power and the anticompetitive effects that have resulted from their anticompetitive patent aggregation scheme. For example, VLSI has sought exorbitant royalties from Intel, even though the prior owners of the patents, owners with much experience in asserting patents, made no similar attempt to enforce the patents. Fortress (through its PAEs) has been able to acquire patents and then, through the benefit of its anticompetitive scheme, seek inflated royalties from licensees that reflect the competition that has been eliminated through Defendants' patent aggregation and far exceeds the actual value of the patents based on their technical and commercial merits.

[124] *Intel Corp. v. VLSI Tech. LLC*, IPR2018-01105, Paper No. 44 (PTAB Dec. 2, 2019).

413. Defendants' demands also show that Fortress has the power to control prices in the MOSFET Channel Fabrication Patents Market. As detailed above, VLSI has sought billions of dollars from Intel in connection with the assertion of the '303 patent and seven other patents VLSI obtained from the same prior owner.

I. Remote Enabling and Disabling of Software Components

414. Fortress, the Uniloc Defendants, and IXI IP have aggregated patents relating to techniques for remotely enabling and disabling the use of software components on a computing device. The field of digital rights management concerns the need for license holders (such as software providers) to implement security features to limit content to authorized users. For example, a supplier of virus protection software for computers may grant a customer a limited number of computers on which its software can be used with specific features enabled and others disabled and will want to ensure that the user does not exceed those limitations in usage. There are a number of techniques to protect digital rights on devices, including embedded security features within the software program or within the media (e.g., disk) used to deliver the software to the user (e.g., codes that a user must enter to activate a given software program). A specific way to implement digital rights management that allows the supplier of the digital rights to continue to manage those rights is to configure a remote server to establish control over a user's local content. Using these techniques enables a remote server to manage and enforce a set of pre-negotiated privileges for a user, the privileges indicating whether the user is entitled to use specified portions of a software program. This type of digital rights management provides a way to protect digital files (e.g., digital media, software, video games, and the like) from unauthorized use. Remotely enabling and disabling the use of software is a common feature that many content distributors use to protect their digital assets, and there is no close substitute for the functionality.

415. Fortress, the Uniloc Defendants, and IXI IP have aggregated patents in an antitrust market for patents purporting to cover remotely enabling and disabling the use of software capabilities, the "Remote Enabling and Disabling of Software Components Patents Market." The Remote Enabling and Disabling of Software Components Patents Market constitutes a relevant

antitrust market where Fortress (either directly through its PAE subsidiaries or by acting in concert with the PAEs in which it invests) and other holders of patents claimed to read on electronic devices that support digital rights management compete with one another to license patents to suppliers of such devices and supporting software.

416. Prior to Fortress gaining control over Uniloc Luxembourg and Uniloc USA, Uniloc Luxembourg and Uniloc USA aggregated substitute patents directed to digital rights management. These patents include U.S. Patent No. 5,579,222 ("Distributed License Administration System Using a Local Policy Server to Communicate with a License Server and Control Execution of Computer Programs"), U.S. Patent No. 5,490,216 ("System for Software Registration"), U.S. Patent No. 9,633,183 ("Modular Software Protection"), U.S. Patent No. 7,197,144 ("Method and Apparatus to Authenticate a User's System to Prevent Unauthorized Use of Software Products Distributed to Users"), U.S. Patent No. 8,769,296 ("Software Signature Tracking"), and U.S. Patent No. 6,857,067 ("System and Method for Preventing Unauthorized Access to Electronic Data").

417. Beginning in 2003, Uniloc Luxembourg, Uniloc USA, and Uniloc (Singapore) Private Limited carried out an extensive litigation campaign based on these patents. From 2003 through 2014, these Uniloc entities asserted at least one of these patents in 104 lawsuits, several of which Uniloc USA and Uniloc Luxembourg continued pursuing after entering the December 30, 2014 Uniloc-Fortress Revenue Sharing Agreement and Patent License Agreement with Fortress.

418. Of the 104 lawsuits based on these patents, at least seven resulted in settlements after defendants capitulated to the Uniloc entities' demands, five of which were secured after joining forces with Fortress:

- *Uniloc USA, Inc., et al. v. Microsoft Corp., et al.*, No. 1:03-cv-00440 (D. R.I.) was dismissed pursuant to a settlement in March 2012
- *Uniloc USA, Inc. et al. v. Full Fat Productions Ltd.*, No. 6:12-cv-00464 (E.D. Tex.) was dismissed pursuant to a settlement in March 2013;
- *Uniloc USA, Inc. et al. v. Electronic Arts Inc.*, No. 6:12-cv-00463 (E.D. Tex.)

and *Uniloc USA, Inc. et al. v. Electronic Arts, Inc.*, No. 6:13-cv-00259 (E.D. Tex.) were dismissed pursuant to a settlement in January 2016;

- *Uniloc USA, Inc. et al. v. PerkinElmer, Inc.*, No. 6:14-cv-00921 (E.D. Tex.) was dismissed pursuant to a settlement in March 2016;
- *Uniloc USA, Inc. et al. v. Mojang AB*, No. 6:12-cv-00470 (E.D. Tex.) was dismissed pursuant to a settlement in August 2016; and
- *Uniloc USA, Inc. et al. v. Chief Architect, Inc.*, No. 6:14-cv-00421 (E.D. Tex.) was dismissed pursuant to a settlement in March 2017.

419. Of the remaining ninety-seven cases, ninety-one were dismissed either voluntarily or pursuant to a stipulated dismissal (indicating possible settlements); five were dismissed with prejudice after the patent claim at issue was invalidated; and one was dismissed for lack of subject matter jurisdiction.

420. One of these Uniloc cases demonstrates the harm to innovation that can arise from aggressive patent assertions made possible by eliminating competition as a result of patent aggregation. On July 20, 2012, Uniloc USA and Uniloc Luxembourg sued Laminar Research, LLC ("Laminar"), asserting infringement of claim 107 of U.S. Patent No. 6,857,067 (the "'067 patent").[125] The complaint alleged that Laminar was infringing "by or through making, using, offering for sale, selling and/or importing Android based applications for use on cellular phones and/or tablet devices that require communication with a server to perform a license check to prevent the unauthorized use of said application, including, but not limited to, X-Plane." X-Plane is a flight simulator available on the Android that was developed by Austin Meyer, president of Laminar.

421. In "An Open Letter to Congress," Mr. Meyer explained how he had developed X-Plane: "Some years ago, living in a cheap apartment by my local airport, I wrote X-Plane, a flight simulator that has since grown to replace Microsoft Flight Simulator as the standard in flight simulation. X-Plane has enabled safer flight of real airplanes by providing low-cost training, has provided millions of hours of enjoyment by hundreds of thousands of customers across the world,

[125] *Uniloc USA, Inc. et al. v. Laminar Research, LLC*, No. 6:12-cv-468 (E.D. Tex.).

and has resulted in millions of dollars per year in taxable revenue – all from an invention that I created, and profited from by turning my idea into a product and selling it to those that wanted it." Mr. Meyer further described on the X-Plane website the toll defending the lawsuit was having on his business:

> I have done some research on this, and I am told that it will cost me about $1,500,000 (one and a half MILLION dollars) to defend this suit.
>
> I am also told that it should take about two to three years to defend.
>
> This is more money than I have made selling Android Apps in the first place.
>
> Under these[] conditions, does it make sense for me to be in business?
>
> Does it make sense for me to make a cool little App like X-Plane for Android and release it?
>
> . . .
>
> What ELSE could I do with $1,500,000 and 3 years?
>
> Recent projects that have cost me similar time and money have been the Meyer/Finlay Pet adoption center (which is getting hundreds, and soon thousands, of animals from the pound adopted) and development of the Vertical Power VP-400 (which is a display for real airplanes that shows the pilot how he can glide to a safe landing after the engine quits).
>
> Future projects I hope to undertake include a high-efficiency rotary engine prototype for experimental aircraft use, an endowment scholarship to my high school, and another pet adoption center.
>
> Which of the projects above shall I shelve to pay my defense fees instead?
>
> How much TIME is being taken away from improving X-Plane to spend on this lawsuit? How many features and improvements will X-Plane NOT get because of this?
>
> What impact is the STRESS of this lawsuit going to have on me? How will that translate into development of X-Plane for my customers?

422. On December 3, 2014, the PTAB held claim 107, along with claims 1, 20, 22, 30, 31, 67, and 108 unpatentable. On December 16, 2016, the court denied Uniloc USA and Uniloc

Luxembourg's motion to amend its infringement contentions to substitute claims 21 and 22 for claim 107 and dismissed the case. After entering into Fortress's anticompetitive scheme, the Uniloc Defendants continued to acquire and assert at least one substitute patent that purports to cover techniques to protect digital software from unauthorized, unlicensed use.

423. More recently, Fortress, the Uniloc Defendants, and IXI IP have aggregated additional patents in the Remote Enabling and Disabling of Software Components Patents Market. Specifically, U.S. Patent No. 6,446,069 ("the '069 patent") is titled "Access Control System for a Multimedia Datastore" and issued on September 3, 2002. According to its abstract, the '069 patent relates to "a computer-implemented access control system." The '069 patent is directed to an access control system that limits users' access to functions of an application program executed by a computer.

424. On its face, the '069 patent is assigned to IBM. On September 27, 2017, IBM assigned the '069 patent to Uniloc Luxembourg. On May 3, 2018, Uniloc Luxembourg assigned the '069 patent to Uniloc 2017.

425. Less than three months later, on July 30, 2018, Uniloc 2017, Uniloc USA, and Uniloc Licensing USA sued Microsoft Corporation for infringing the '069 patent.[126] The Uniloc entities also asserted three additional patents. Four months after filing the lawsuit, the Uniloc entities voluntarily dismissed their claims without prejudice.

426. In addition to the substitute patents in the Remote Enabling and Disabling of Software Components Patents Market aggregated by the Uniloc Defendants, Fortress controls and has asserted another substitute patent in this market via the patent's direct owner, IXI IP.

427. Specifically, U.S. Patent No. 7,016,648 ("the '648 patent") is titled "Method, System and Computer Readable Medium for Downloading a Software Component to a Device in a Short Distance Wireless Network" and issued on March 21, 2006. According to its abstract, the '648 patent relates to "downloading . . . a software component to a short distance wireless network

[126] *Uniloc 2017 LLC et al. v. Microsoft Corporation*, No. 8:18-cv-01320 (C.D. Cal.).

in response to device information and/or user information." The '648 patent is directed to techniques for downloading software based on device information (e.g., device type, device manufacturer) or user information (e.g., user preferences, price plan). In this manner, the remote operator can enable or restrict access to software components—including limiting the period of time that certain software components are accessible—based on device and user information.

428. On its face, the '648 patent is assigned to IXI Mobile (Israel) Ltd. On November 28, 2001, a change of name was executed from IXI Mobile Israel Ltd. to IXI R&D. On June 5, 2014, IXI R&D assigned the '648 patent to IXI IP. That same day, IXI IP conveyed a security interest in the '648 patent to Fortress Credit. On September 11, 2014, Fortress Credit Co. DBD LLC assigned its interest in the '648 patent to FCO V CLO Transferor LLC, another Fortress subsidiary.

429. Less than two weeks after IXI IP conveyed a security interest in the '648 patent to Fortress Credit, IXI IP initiated a litigation campaign based on the '648 patent. In 2014, IXI IP brought three lawsuits, asserting the same four patents in each case, including the '648 patent:

- *IXI Mobile (R&D) Ltd. et al. v. Samsung Electronics Co.*, Ltd. et al., No. 1:14-cv-04355 (S.D.N.Y.), subsequently transferred as No. 4:15-cv-03752 (N.D. Cal.) (HSG);
- *IXI Mobile (R&D) Ltd. et al. v. Blackberry Limited et al.*, No. 1:14-cv-04428 (S.D.N.Y.), subsequently transferred as No. 4:15-cv-03754 (N.D. Cal.) (HSG); and,
- *IXI Mobile (R&D) Ltd. et al. v. Apple, Inc.*, No. 1:14-cv-07954 (S.D.N.Y.), subsequently transferred as No. 4:15-cv-03755 (N.D. Cal.) (HSG).

430. In June 2015, Apple and Samsung filed petitions for *inter partes* review, challenging the validity of each asserted claim of the patents at issue. In November 2015, the Court stayed the litigations pending *inter partes* review. The PTAB instituted review of all but one of the challenged claims. In December 2016, the PTAB found all the instituted claims unpatentable, including all eleven challenged claims of the '648 patent. Ultimately, the actions were dismissed following joint stipulations of dismissal without prejudice.

431. Defendants' aggregation of patents in the Remote Enabling and Disabling of Software Components Patents Market (including at least eight substitute patents) has reduced competition in that market, leading to inflated royalties and decreased licensing output. For example, the '069 and '648 patents each purport to cover techniques to remotely enable and disable the use of software components on a computing device. Specifically, the '069 patent purports to cover methods in which the user downloads an entire software program, and specified components are selectively enabled or disabled at the user device. Meanwhile, the '648 patent purports to cover a method in which the user can only download specified components of the software program. Restricting the available features of a software program after it is downloaded can be a substitute for restricting the ability to download the software program in the first place, and vice versa. When the '069 and '648 patents were owned by different entities, a party wishing to use one of these potential substitute technologies would be able to take advantage of competition between the owners of these patents when attempting to secure a license. But because of Defendants' unlawful aggregation of patents, Defendants now control each of the substitute technologies, eliminating such competition.

432. That lessening of competition is reflected by the evidence of supracompetitive royalties demanded and received by Defendants. Defendants have pursued numerous assertions and secured multiple settlements for substantial royalties.

433. Apple has been injured by the elimination of competition resulting from Fortress, the Uniloc Defendants, and IXI IP's aggregation of patents in the Remote Enabling and Disabling of Software Components Patents Market. Specifically, by eliminating competition, this aggregation positioned Fortress, the Uniloc Defendants, and IXI IP to demand supracompetitive royalties that the prior patent holders were unable to demand because of the competitive constraints they faced. Because it has refused to capitulate to exorbitant royalty demands, Apple has been injured by Fortress and IXI IP having targeted Apple as part of their litigation campaign based on these patents. Moreover, Apple and Intel have been injured as a result of the ongoing threat that

Defendants will continue to assert patents in the Remote Enabling and Disabling of Software Components Patents Market against them.

434. The supracompetitive licensing royalties Fortress's PAEs have obtained are direct evidence of its market power. For example, the Uniloc Defendants have been able to coerce several parties (including at least PerkinElmer, Chief Architect Inc., Mojang AB, and Electronic Arts Inc) to license its patents in the Remote Enabling and Disabling of Software Components Patents Market, even though the patents have repeatedly been shown to lack merit. Fortress (through its PAEs) has been able to acquire patents and then, through the benefit of its anticompetitive scheme, extract inflated royalties from licensees that reflect the competition that has been eliminated through Defendants' patent aggregation and far exceeds the actual value of the patents based on their technical and commercial merits. The prior owners would not have transferred the aggregated patents if they could have licensed the patents for the amounts that Defendants have received.

435. Defendants' demands also show that Fortress has the power to control prices in the Remote Enabling and Disabling of Software Components Patents Market.

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436. A table summarizing certain facts regarding the patents aggregated in the Relevant Patents Markets is attached hereto as Exhibit A.

J. Defendants' Assertions of Portfolios Encompassing Substitute Patents

437. As described above, although Defendants have entered into settlements with multiple other targets of their anticompetitive scheme, the precise details regarding the settlement terms and royalties paid to Defendants are not publicly available. In fact, at least two courts—the Northern District of California and the Federal Circuit—have determined that the Uniloc Defendants have improperly sought to over-redact information contained in court filings, including references to and citations from court decisions, and information regarding their licensees and

license payments made.[127] Likewise, although details regarding the financial terms under which Fortress and VLSI obtained VLSI's patents, and the damages amounts VLSI claims Intel owes it may well bear on Plaintiffs' claims, Fortress and VLSI have refused Intel's request to disclose such information to this Court (even subject to a request to seal). Accordingly, the full extent of the supracompetitive royalties Fortress and its PAEs have extracted through their scheme can only be obtained through discovery.

438. It is clear, however, that Fortress and its PAEs typically do not seek royalties or grant licenses on a patent-by-patent basis. Instead, individual patents are often asserted with other patents in a given Defendant's portfolio, and settlements obtained appear to address multiple lawsuits and other assertions. Defendants take advantage of their aggregation by making exorbitant royalty demands with product suppliers no longer able to use the threat of licensing from independent holders of substitute patents that were available before Defendants' patent aggregations occurred.

439. Defendants' practice of licensing on a portfolio basis is consistent with typical licensing practices in the electronics industry, where licensing generally occurs on a portfolio-wide basis. This is also consistent with Uniloc's in-court representations that its practice is not to conduct per-patent valuations.[128]

440. Accordingly, although aggregations of substitute patents and the resulting anticompetitive effects through elimination of competition are sometimes evidenced by patent assertions or lawsuits that specifically reference patents that Defendants have aggregated, more often these anticompetitive effects are reflected in inflated royalty demands or licensing terms for patent portfolios that include both patents that are substitutes and patents that are complements. The inflated portfolio royalties sought or obtained are made possible by Defendants' aggregations

[127] *See Uniloc 2017 LLC et al. v. Apple, Inc.*, 2019-1922 (Fed. Cir. July 9, 2020); *Uniloc 2017 LLC v. Apple Inc.*, 2019 U.S. Dist. LEXIS 78049 (N.D. Cal., May 7, 2019).

[128] *See* Transcript of Proceedings at 23, *Uniloc USA, Inc. v. Apple, Inc.*, No. 5:19-cv-01692 (N.D. Cal. July 14, 2020) (EJD) ("There does not exist a valuation for groups of patents or individual patents.").

of substitute patents, which eliminate alternatives for Defendants' targets and thereby reduce their bargaining leverage against Defendants' assertions.

IV. FORTRESS AND THE OTHER DEFENDANTS HAVE HARMED COMPETITION IN THE RELEVANT PATENTS MARKETS

441. As alleged above (e.g., paragraphs 33-94 and 145-440), Fortress, its affiliate Fortress Credit, and the other Defendants, through their anticompetitive conduct, have harmed competition at least in the Relevant Patents Markets described herein.

442. By creating a massive portfolio that aggregated substitutes and complements in the antitrust markets described above, Fortress decreases the importance of any particular patent held by its PAEs because, given the size of the portfolio, it becomes exceedingly difficult for any potential licensee to meaningfully analyze the patents in the portfolio in a systematic fashion. Thus, the size of the aggregated portfolio—along with Defendants' aggregation of substitute and complement patents—imposes substantial costs for suppliers of electronic devices to design or work around no matter the merits of the constituent patents. Further, as described above, Fortress's PAEs assert their patents to read broadly on the accused products in ways that are facially invalid, but that Fortress's PAEs also claim make it infeasible to design around. Moreover, the features of products accused of infringement by Fortress's PAEs may be difficult or impossible to modify because of the extremely high switching costs involved given the investments that have already been made in product design and production. For example, a report for the Uniloc Luxembourg board of directors indicates that litigation "campaigns are launched when the relevant technology reaches a well-monetized status." Even if Apple, Intel, and other targets of Fortress-backed assertions have had success in invalidating or proving non-infringement of certain Fortress-backed patents, Fortress and its PAEs just turn to the next patent in the portfolio to assert. Fortress and its PAEs exploit that dynamic to shield from scrutiny their patents and to extract royalties based on the size of the portfolio (including by distributing it among multiple PAEs to assert) rather than its quality.

443. Thus, in addition to the market power resulting from reduction of competition from aggregation of substitute and complement patents, alleged above at, e.g., paragraphs 145-440, the power of Fortress's patent portfolio is based on the size of the portfolio itself, which imposes hurdles to design around regardless of the merits of the patents within it, and its distribution among aggressive PAEs. That size allows Defendants to threaten serial litigation and impose uncertainty on their victims regardless of the merits of the asserted patents, which become secondary to the sheer size of the portfolio. Accordingly, the targets of Defendants' assertions have no choice but to buy licenses from Defendants or to face endless, meritless litigation. Before aggregation, the holders of meritless patents lacked the same incentives to assert them as do Fortress and its PAEs. But, to the extent that they had asserted them, litigation would have been a viable possibility for the targets to address those assertions. In their aggregation and serial assertion strategy, however, Defendants are not dissuaded by repeated litigation failures from asserting ever more patents.

444. Fortress's aggregation of patents also decreases access to any patents that Fortress controls for which a licensee might actually want a license to use the technology in the patent. Before aggregation, those patents could have been the subject of licensing discussions focusing on the merits of the patents and that would have promoted use of the technology. But by aggregating potentially valuable patents in a huge portfolio with meritless patents in an anticompetitive scheme, Fortress and the other Defendants obscure those patents from the market and reduce the availability of information. Thus, rather than increasing efficiency and enhancing output, the scheme has the opposite effect—the value of meritless patents is enhanced and the value of any patents in which there might have been interest in practicing is decreased, thereby reducing innovation and output.

445. There is no procompetitive justification for the anticompetitive aggregation of patents by Fortress and its PAEs. To the extent Defendants assert that any procompetitive justifications exist, such purported justifications are outweighed by the anticompetitive effects in the markets alleged herein or could be obtained through less restrictive means. For example, the operating companies that transferred patents to Fortress's PAEs (after Fortress had gained control

of the PAEs) would have been capable of licensing their own patents. As an example, Nokia, which transferred patents to Inventergy, reported in its 2018 annual report that "Our Patent Business continues to grow its successful patent licensing and monetization activities" and that Nokia was a party to more than 100 patent licenses.

V. THE ANTICOMPETITIVE EFFECTS AND INJURY TO PLAINTIFFS FROM DEFENDANTS' SCHEME

446. As set forth above, Fortress and its PAEs possess market power in the Relevant Patents Markets.

447. Direct evidence demonstrates the adverse effects on competition of the anticompetitive conduct of Fortress and the other Defendants through aggregation in the Relevant Patents Markets (as described above and below). In particular, through their aggregation scheme, Fortress and the other Defendants seek and obtain far more for their patents than the costs at which they acquired those patents or the rates at which they would have been licensed before aggregation eliminated competition.

448. Fortress and its PAEs' anticompetitive scheme—including patent aggregation, ownership by an array of aggressive PAEs, and efforts to evade FRAND commitments—has led to anticompetitive effects in each of the Relevant Patents Markets, including supracompetitive royalties sought and obtained and reduced licensing output. Fortress and the other Defendants' conduct has harmed and continues to harm competition in interstate commerce.

449. In particular, Defendants' illegal scheme has resulted in inflated licensing royalties—i.e., higher prices—and imposed burdens, costs, and uncertainties for Intel, Apple, and other purchasers in the Relevant Patents Markets. The purchasers in those markets include electronic device suppliers (e.g., of smartphones, tablets, and computers, such as those offered by Apple) and providers of components for such devices (e.g., processors and chipsets, such as those offered by Intel) that are potential and actual licensees. In addition, as a result of the illegal conduct of Fortress and the other Defendants, U.S. and other end consumers have been harmed and face a continuing threat of increased prices and reduced innovation and quality for electronic devices.

450. Defendants' illegal conduct causes obvious harm to licensees such as Intel and Apple—i.e., customers in the Relevant Patents Markets—when they are compelled to pay inflated royalties. Licensing customers are also harmed, even when they do not acquiesce to an inflated royalty, by being forced to incur substantial expenses, uncertainty, and burdens in resisting the patent litigations and acute and ongoing threats that the aggregation and transfer schemes of Defendants have enabled.

451. The costs of Defendants' serial assertions are made vivid in the example of the lawsuit against Laminar described above, where the time and expense of defending against the meritless assertion diverted the resources of a small business from developing innovative products. While Intel, Apple, and other large companies have more employees and more resources than a company like Laminar, the time of their employees and their resources are finite. Hours of an engineer's time spent in a deposition or dollars spent defending meritless claims are gone and cannot be allocated to innovation and product development. The huge volume of litigation that Defendants have directed at Intel, Apple, and other companies based on its anticompetitive aggregation strategy thus exacts a toll on innovation.

452. For example, Intel and Apple have spent millions of dollars to date on outside resources (including counsel, experts, and vendors) to defend against Fortress-backed demands and assertions. Intel and Apple have also each been harmed by the enormous amounts of time their employees have been forced to spend on these matters, including negotiating with Defendants as well as collecting information and documents and preparing for depositions, rather than doing their jobs. As an example, in litigation brought by Uniloc USA and Uniloc Luxembourg, those Defendants have already deposed eight Apple engineers, two human resource witnesses, and one Apple licensing witness. Similarly, in Intel's litigation against VLSI in Delaware, Intel's disclosures identify twenty-five Intel employees with knowledge relevant to the litigation, including engineers and employees in the marketing and finance departments. An employee identified in such disclosures is typically deposed, necessitating at least two full days dedicated to the litigation between preparation and sitting for the deposition, in addition to other time dedicated

to identifying relevant documents or providing information to counsel on the facts of the case. Defendants have employed the strategies set forth herein to impose these costs on licensees and to use their leverage to extract unreasonable and unjustified royalties. For example, in the section of Intel's 10-K for 2020 in which it discloses VLSI's litigations against Intel, Intel provides the following caution about the impact of such litigation:

> We are a party to various legal proceedings, including those noted in this section. Although management at present believes that the ultimate outcome of these proceedings, individually and in the aggregate, will not materially harm our financial position, results of operations, cash flows, or overall trends, legal proceedings and related government investigations are subject to inherent uncertainties, and unfavorable rulings or other events could occur. Unfavorable resolutions could include substantial monetary damages. In addition, in matters for which injunctive relief or other conduct remedies are sought, unfavorable resolutions could include an injunction or other order prohibiting us from selling one or more products at all or in particular ways, precluding particular business practices, or requiring other remedies. An unfavorable outcome may result in a material adverse impact on our business, results of operations, financial position, and overall trends. We might also conclude that settling one or more such matters is in the best interests of our stockholders, employees, and customers, and any such settlement could include substantial payments.

Likewise, Apple's 2020 10-K contains a similar warning regarding the disruptive impact of defending patent litigation:

> The Company has faced and continues to face a significant number of patent claims relating to its cellular-enabled products, and new claims may arise in the future. For example, technology and other patent-holding companies frequently assert their patents and seek royalties and often enter into litigation based on allegations of patent infringement or other violations of intellectual property rights. The Company is vigorously defending infringement actions in courts in several U.S. jurisdictions, as well as internationally in various countries. The plaintiffs in these actions frequently seek injunctions and substantial damages. Regardless of the merit of particular claims, defending against litigation or responding to government investigations can be expensive, time-consuming, disruptive to the Company's operations and distracting to management. In recognition of these considerations, the Company may enter into agreements or other arrangements to settle litigation and resolve such challenges. No assurance can be given that such agreements can be obtained on acceptable terms or that litigation will not occur. These agreements may also significantly increase the Company's cost of sales and operating expenses.

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> The outcome of litigation or government investigations is inherently uncertain. If one or more legal matters were resolved against the Company or an indemnified third party in a reporting period for amounts above management's expectations, the Company's financial condition and operating results for that reporting period could be materially adversely affected. Further, such an outcome could result in significant compensatory, punitive or trebled monetary damages, disgorgement of revenue or profits, remedial corporate measures or injunctive relief against the Company, and could require the Company to change its business practices or limit the Company's ability to offer certain products and services, all of which could materially adversely affect its financial condition and operating results.

453. Intel and Apple continue to experience the unlawful effects of Defendants' unlawful conduct so long as they are subject to litigation by Fortress-backed patents. Intel, Apple, and other purchasers in the Relevant Patents Markets have also been harmed by the ongoing threat that Defendants will seek exorbitant royalties based on their aggregation of substitute and complement patents in the Relevant Patents Markets and the uncertainty caused by such threat.

FIRST COUNT
Agreements to Restrain Competition in Patent Licensing

(Section 1 of the Sherman Act)

(Claim Against Fortress, Fortress Credit, Uniloc USA, Uniloc Luxembourg, Inventergy, and IXI IP)

454. Intel and Apple repeat and reallege the allegations of the preceding and subsequent paragraphs as if fully set forth herein.

455. As alleged above, particularly at paragraphs 55-94, Fortress and Fortress Credit reached agreements with various parties, including Uniloc USA, Uniloc Luxembourg, Inventergy, and IXI IP (collectively the "Agreeing Parties"), to aggregate patents under Fortress's control and to assert patents to increase the total royalties obtained from licensing the Fortress-backed patents. Fortress and each of the Agreeing Parties intended that through their agreements they would extract royalties from their targets—like Intel and Apple—beyond the royalties that could have been obtained but for aggregation by Fortress.

456. The agreements between Fortress and the Agreeing Parties to aggregate patents substantially raised or threaten to raise prices and have resulted or threaten to result in other anticompetitive effects, including in the Relevant Patents Markets (as described at paragraphs 145-440), and for downstream products sold to consumers. The agreements have substantially affected interstate commerce.

457. The agreements to aggregate and assert patents generated no efficiencies, and in fact were designed to create inefficiencies in the licensing that Fortress could exploit to harm Intel, Apple, and other potential licensees, as well as finished product consumers. Any conceivable efficiencies the agreements may have created were substantially outweighed by their anticompetitive effects or could have been obtained through substantially less restrictive means.

458. As a direct, proximate, and foreseeable result of Fortress and the Agreeing Parties' unlawful agreements, Intel and Apple have suffered or will suffer harm to their businesses and property, and, absent an injunction, Intel and Apple will continue to suffer from these effects. Intel and Apple's past and continuing harm includes litigation costs, the risk of supracompetitive licensing rates, business uncertainty, and business resources lost in dealing with the consequences of the Agreeing Parties' unlawful agreements.

SECOND COUNT

Unlawful Asset Acquisitions

(Section 7 of the Clayton Act)

(Claim Against Fortress, Fortress Credit, Uniloc 2017, VLSI, INVT, and IXI IP)

459. Intel and Apple repeat and reallege the allegations of the preceding and subsequent paragraphs as if fully set forth herein.

460. Fortress, Fortress Credit, Uniloc 2017, VLSI, INVT, and IXI IP (the "Acquiring Parties") have acquired numerous patents (or interests in patents), which are assets under Section 7 of the Clayton Act. Those anticompetitive acquisitions include at least those described in Section I above. The effects of the acquisitions have been to lessen competition substantially, and to tend

to create market power, including in the Relevant Patents Markets. Among other harms, the transfers have significantly enhanced the Acquiring Parties' ability and incentives to harm competition, including by evading constraints on assertion and creating incentives to assert patents aggressively and thus increasing the cost and likelihood of litigation.

461. As a direct, proximate, and foreseeable result of the Acquiring Parties' unfair and wrongful conduct, as alleged above, there is a significant threat of inflated royalties to consumers of licenses to Fortress-backed patents.

462. As a direct, proximate, and foreseeable result of the Acquiring Parties' unfair and wrongful conduct, as alleged above, there is a significant threat of harm to consumers, including through the inevitable passing on to consumers of the inflated royalties demanded for Fortress-backed patents. The anticompetitive acquisitions have thus harmed consumers for electronics products.

463. As a direct, proximate, and foreseeable result of the unlawful patent acquisitions, Intel and Apple have suffered or will suffer harm to their businesses and property, and, absent an injunction and rescission of these transactions, Intel and Apple will continue to suffer from these effects. Intel and Apple's past and continuing harm include the risk of supracompetitive licensing rates, business uncertainty, litigation costs, and business resources lost in dealing with the consequences of the Acquiring Parties' unlawfully-acquired patents.

THIRD COUNT

Unfair Competition

(Cal. Bus. & Prof. Code § 17200)

(Claim Against All Defendants)

464. Intel and Apple repeat and reallege the allegations of the preceding and subsequent paragraphs as if fully set forth herein.

465. Defendants have engaged in unfair competition in violation of Cal. Bus. Prof. Code § 17200, et seq. As set forth above, Defendants have engaged in illegal conduct by violating the Sherman and Clayton Acts.

466. As a direct result of Defendants' wrongful conduct, competition has been injured, and, absent an injunction and rescission of these transactions, will continue to be injured, including in the Relevant Patents Markets as alleged above. Moreover, this conduct threatens injury to downstream competition for price, innovation, and quality in sales of cellular devices, thereby injuring consumers in California and elsewhere. These threatened injuries include the passing on to consumers of improperly inflated royalties, and decreases in innovation and quality competition.

467. As a direct result of Defendants' illegal conduct, Intel and Apple have suffered economic harm in the form of litigation costs and diversion of resources away from innovation to respond to these entities' serial nuisance suits.

PRAYER FOR RELIEF

Intel and Apple respectfully request the following relief:

a) That Defendants' unlawful conduct be declared a violation of Section 1 of the Sherman Act, 15 U.S.C. § 1; Section 7 of the Clayton Act, 15 U.S.C. § 18; and Cal. Bus. Prov. Code § 17200, et seq.;

b) That Intel and Apple recover damages against Defendants in an amount to be determined and multiplied to the extent provided by law, including under Section 4 of the Clayton Act;

c) An order directing the termination of the anticompetitive conduct and injunctive relief that restores competition to the markets at issue;

d) That all contracts or agreements Defendants entered into in violation of the Sherman Act, Clayton Act, or Cal. Bus. Prov. Code § 17200, et seq. be declared void and the patents covered by those transfer agreements be transferred back to the transferors;

e) That all patents transferred to Defendants in violation of the Sherman Act, Clayton Act, or Cal. Bus. Prov. Code § 17200, et seq. be declared unenforceable;

f) Award to Intel and Apple their costs and expenses associated with this case, together with interest; and

g) Grant such other and further relief as the Court may deem just and proper under the circumstances.

JURY DEMAND

Intel and Apple demand a jury trial on all issues and claims so triable.

REDACTED VERSION OF DOCUMENT SOUGHT TO BE SEALED

DATED: March 8, 2021 Respectfully submitted,

By: /s/ *Mark D. Selwyn*

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