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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., IXI IP, LLC, and SEVEN NETWORKS, LLC,

Defendants.

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

AMENDED COMPLAINT

JURY TRIAL DEMANDED

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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 their patents cover inventions not imagined at the time they were granted."[4] Further, the report

[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.
[4] Executive Office of the President, *Patent Assertion and U.S. Innovation* at 1 (June 2013).

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 in litigation is unknown, estimates put it in the tens of billions of dollars.[8] As one example, the

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[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.
[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).

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, while the overall level of patent litigation may be declining, assertions by non-practicing entities are increasing.[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 $41.7 billion of assets under management as of March 31, 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 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

[9] Burford Capital, *Investor Presentation – 1H 2019 Results* at 5 (July 25, 2019).
[10] Unified Patents, *Q3 2019 Patent Dispute Report* (Sept. 30, 2019) ("District court patent litigation is down 5.5% compared to the same period for 2018 (down 43% compared to the peak in 2015). However, NPEs in Q1-Q3 2019 filed 1,424 new district court cases, slightly more than the number of new NPE cases in 2018."); Unified Patents, *Q2 2019 Patent Dispute Report* (July 1, 2019) ("District court patent litigation is down 5.5% compared to the same period for 2018 ("NPEs filed over 550 new district court cases in Q2 2019, the most NPE cases in a single quarter since 2016").
[11] Fortress, https://www.fortress.com/about (last visited Aug. 4, 2020).

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 and for licenses to Defendants' overall portfolio.

10. Further enhancing the anticompetitive scheme, 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, which faced competitive constraints—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 acquire and seek to monetize meritless patents that never would have been asserted by their original owners, given the competitive constraints those owners faced that Defendants' patent aggregation scheme has eliminated—imposing a tax on the electronics industry that increases prices, decreases output, 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 competition that has been eliminated, 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 any valuable patents with many meritless patents.

11. 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 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.

12. 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. Rather than licensing and litigating based on the merits of the patents which the prior owners were required to do given the competitive constraints they faced, 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.

13. 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

14. 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.

15. 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.

16. 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.

17. 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.

18. 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.

19. 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.

20. 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.

21. 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.

22. 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.

23. 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.

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

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25. Defendant Seven Networks, LLC ("Seven Networks") claims to be a Delaware limited liability company with its principal place of business at 2660 East End Boulevard South, Marshall, Texas.

JURISDICTION AND VENUE

26. 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.

27. 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.

28. 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

29. Fortress describes its investing approach as "making control-oriented investments

in cash flow generating assets."[12] When it comes to patent investments, Fortress has taken its "control-oriented" approach to an extreme. Fortress's model is to condition its investments in PAEs on terms so severe that the PAEs have no choice but to make aggressive and reckless patent assertions to attempt to generate the revenue required to meet their obligations to Fortress. When they fail to do so—as is often the case—Fortress steps in and assumes even more control and/or ownership of the patents, allowing it to ratchet up the aggressiveness of the assertions. 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.

30. 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."[13] 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."[14] That litigation incentive is

[12] Fortress, https://www.fortress.com/businesses/private-equity (last visited Aug. 4, 2020).
[13] 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).
[14] *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."[15]

31. 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.[16] 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.

32. 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 in different circumstances allows Fortress and its PAEs flexibility to stifle competition in a variety

[15] *Id.*

[16] 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.

of ways and against a variety of electronic device suppliers.

33. 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.

34. 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.

35. 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.

36. 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.

37. 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 forego those options and design its product in a different way). 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.

38. 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. But, after aggregation, 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.

39. 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.

40. 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.

41. 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.

42. 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.

43. 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.

44. Fortress's use of a web of separate PAEs to disperse and enforce the portfolio also ensures that there is no single entity that 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. 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.

45. 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.

46. 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.

47. 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 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.

48. 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.

49. Transferring patents from operating companies to Fortress and its PAEs reduces or eliminates competitive constraints that would otherwise have restricted the ability of the former owners to impose onerous licensing terms when they asserted the patents. Product companies generally sell a range of products in competition with other companies, and their ability to sell any of them is constrained by the competition faced by all the products. A product company knows that if it acts too aggressively or rapaciously toward the customers of some of its products, those customers and others will be more likely to buy other types of products offered by the company from other companies that have not been so aggressive. In that way, competition in the sale of one product constrains the prices of other products, and the product companies selling such products

will have a strong competitive incentive to maintain a positive industry reputation and good customer relationships over the full range of their products. For example, infringement actions by component or software suppliers against customers or potential customers will limit prospects for future sales. Suits by electronic device suppliers against suppliers or potential suppliers of components or software could jeopardize their ability to source essential components or software for their devices. Reputational and relational harm from filing repeated, baseless infringement suits will limit product companies' ability to participate effectively in collaborative industry initiatives, such as standard setting or other industry endeavors. Because transfers of patents from product companies to Fortress and its PAEs lessen or eliminate these and other constraints and place the patents with a party with different incentives, those transfers result in inflated royalties or other less favorable licensing terms. Transfers to Fortress and its PAEs—companies that produce no products and thus face no risk of patent countersuits from their targets—place patents in the hands of entities that face no such competitive constraints and that are thus free to maximize their profits through aggressive litigation campaigns. Moreover, Fortress's use of obfuscation and a web of PAEs heightens the anticompetitive effects of such transfers. That Fortress and its PAEs have repeatedly entered patent transfer agreements with no efficiency rationale and those agreements have resulted in inflated royalties is direct proof of the anticompetitive effects of those transfers.

50. 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 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.

A. Fortress and the Uniloc Defendants

51. 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. 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. 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.

52. 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."[17]

53. Fortress later took steps to control even more directly the assertion of the Uniloc Luxembourg and Uniloc USA patents. On February 23, 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.

54. 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.

55. As one court observed about the various transfers of patents and agreements

[17] *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).

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 Uniloc Luxembourg from any award of sanctions in the event Uniloc loses this litigation (or some substantial part thereof)."[18]

56. 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. 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.

57. The patents that Uniloc Luxembourg assigned to Uniloc 2017 also included patents claimed to be standard-essential patents ("SEPs") for cellular standards that originated with Koninklijke Philips Electronics N.V. ("Philips"). Philips had provided a commitment to the European Telecommunications Standards Institute ("ETSI") to license any of its essential patents on fair, reasonable, and non-discriminatory ("FRAND") terms and conditions. The patents were subsequently transferred to the PAE Pendragon Wireless in 2012 and then to Uniloc Luxembourg in 2018 before ultimately being transferred to Uniloc 2017 in 2018.

B. Fortress and VLSI

58. Fortress strategized for six months before undertaking the creation of VLSI and causing the transfer of patents to VLSI.[19] Among the options Fortress considered was a "Privateering Option" in which the patents would be transferred to a new entity from their prior

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

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

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. The terms of the arrangement were spelled out in a Patent Purchase and Cooperation Agreement.

59. 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.

60. 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.

61. 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.

C. Fortress, Inventergy, and INVT

62. 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.

63. 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. As described further below, a number of the Panasonic patents are claimed to be essential to cellular standards and subject to commitments to license them on FRAND terms and conditions.

64. 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.

65. 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."

66. 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."

67. 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."

68. 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."[20]

69. 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

[20] 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).

and Huawei."[21]

70. 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.

71. 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 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

72. 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.

73. 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

[21] *Id.*

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.

74. 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

75. 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.

76. 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.

77. 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

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

79. 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.

80. 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.

81. 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.[22] 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)."[23]

II. LICENSING AND LITIGATION CAMPAIGNS

82. 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

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

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

REDACTED VERSION OF DOCUMENT SOUGHT TO BE SEALED

- *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.)

84. 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.

85. 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

86. 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.

87. 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.

88. The three 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."[24] It is no surprise that one judge described Uniloc USA's infringement theories in a case as "bogus and conclusory."[25] The examples below demonstrate the flaws in the Uniloc Defendants' patents, including patents that have been found invalid in multiple ways by multiple adjudicators.

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

- *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.)

90. 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.[26] On July 2, 2019, Uniloc USA, Uniloc Luxembourg, and Uniloc 2017 jointly filed with defendants Huawei

[24] Patent Owner Preliminary Response to Petition, *Unified Patents Inc. v. Uniloc Luxembourg, S.A.*, IPR2017-01850, Paper No. 6 (PTAB Nov. 30, 2017).
[25] Transcript of Proceedings, *Uniloc USA, Inc. v. Apple Inc.*, No. 3:18-cv-00359 (N.D. Cal. June 28, 2018) (WHA).
[26] 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).

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."[27] 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."[28]

91. 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.[29] In its Final Written Decision, the PTAB found all challenged claims to be unpatentable.[30]

92. 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.

93. 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[31] and the '079

[27] Joint Motion to Dismiss, *Uniloc USA, Inc. et al v. Huawei Device USA, Inc. et al*, No. 2:18-cv-00074 (E.D. Tex. Jul. 2. 2019), Dkt 58.
[28] 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. Jul. 9. 2019), Dkt 59.
[29] *Apple Inc. v. Uniloc 2017 LLC*, No. IPR2019-00251, Paper No. 7 (PTAB July 22, 2019).
[30] *Apple Inc. v. Uniloc 2017 LLC*, No. IPR2019-00251, Paper No. 22 (PTAB July 20, 2020).
[31] *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).

patent[32] are unpatentable and that three of the four challenged claims of the '106 patent[33] are unpatentable, and it has instituted *inter partes* review of the challenged claim of the '252 patent.[34]

94. 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 (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."[35] Apple obtained this analysis through third-party discovery from Fullpower. Uniloc USA and Uniloc

[32] *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.

[33] *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).

[34] *See Apple Inc. v. Uniloc 2017 LLC*, IPR2019-01667, Paper No. 7 (PTAB Apr. 21, 2020).

[35] *Uniloc USA, Inc. v. Apple Inc.*, 4:18-cv-00362 (N.D. Cal. Mar. 14, 2018) (PJH), Dkt. 120-2.

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.

95. 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").[36] The Uniloc Defendants litigated the case against Samsung all the way until the days leading up trial, when it voluntarily dismissed the case.

96. 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 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

[36] 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.

REDACTED VERSION OF DOCUMENT SOUGHT TO BE SEALED

Case	Patent	Per Unit Damages	Damages
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
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[37]
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**

97. 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."[38] Another court

[37] 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.

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

recently found good cause to unseal information originally redacted by Uniloc regarding the number of patents transferred from prior owners.[39] 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 US Patent & Trademark Office 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.

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

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.[40]

98. 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 83—makes clear, the Uniloc

[39] *Uniloc USA, Inc. v. Apple Inc.*, No. 5:19-cv-01692-EJD, Dkt. 142 (N.D. Cal. July 31, 2020).
[40] No. 19-1922, Dkt. 4 (Fed. Cir. June 7, 2019).

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 because they are not isolated exceptions." For example, Uniloc USA and Uniloc Luxembourg made repeated misrepresentations about their lack of connection to California[41]:

> 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).

99. 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

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

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

B. VLSI

100. 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").[42] 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.

101. 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").[43] 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.

102. 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

[42] *VLSI Tech. LLC v. Intel Corp.*, No. 5:17-cv-05671 (N.D. Cal. Oct. 2, 2017) (BLF).
[43] *VLSI Tech. LLC v. Intel Corp.*, No. 1:18-cv-00966 (D. Del. June 20, 2018).

many of the same products at issue in the previous cases.[44]

103. 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 Delaware and, ***that same day***, filed three suits in the Western District of Texas (the "VLSI Texas Actions"),[45] asserting the same six patents at issue in second Delaware suit, as well as two additional patents.

104. 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]

105. 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.

106. 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,

[44] *VLSI Tech. LLC v. Intel Corp.*, No. 1:19-cv-00426 (D. Del. Mar. 1, 2019).
[45] *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).

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

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

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

109. [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.

110. 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.

111. 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 FRAND-committed 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."[46] The Commission upheld this decision.

D. IXI IP

112. 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.

113. 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.

114. On December 21, 2016, the PTAB found unpatentable every asserted claim of one of the remaining patents-in-suit in *inter partes* review proceedings.[47] 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.[48]

115. 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").[49] The USPTO thereafter instituted a reexamination of the '532 patent challenging, among other claims,

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[46] *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).
[47] *See Samsung Elecs. v. IXI IP, LLC*, IPR2015-01444, Paper No. 27 (PTAB Dec. 21, 2016).
[48] Office Action (mailed July 27, 2020).
[49] *See Samsung Elecs. v. IXI IP, LLC*, IPR2015-01443, Paper No. 27 (PTAB Dec. 21, 2016).

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.[50] In response, IXI sought to add numerous 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 Jun. 17, 2020).

116. 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.[51] 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.[52] 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.

117. 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.[53] IXI thus attempts to immunize its patent from *inter partes* review challenge.

E. Seven Networks

118. 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

[50] Office Action (mailed Sept. 25, 2018).
[51] *IXI Mobile (R&D) Ltd. v. Apple Inc.*, No. 4:15-cv-3755 (N.D. Cal. Mar. 7, 2019) (HSG), Dkt. 157.
[52] *Id*. Dkt. 164.
[53] *Apple Inc., v. IXI IP, LLC*, IPR2019-00124, Paper No. 13 (PTAB Jun. 3, 2019).

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.

119. Seven Networks eventually obtained settlements with ZTE, Samsung, and Google.[54]

120. 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

121. 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.

122. 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.

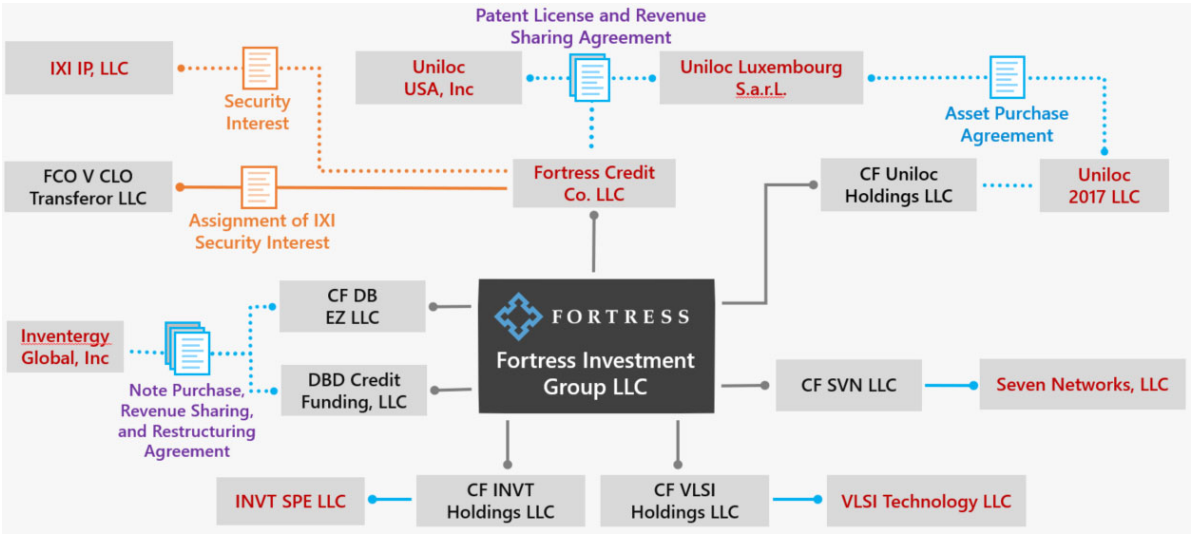
123. Fortress and KIP CR P1 agreed to step into the place of Crossroads in these litigations notwithstanding the PTAB and Federal Circuit findings. Fortress's subsequent writs of

[54] *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.

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.

III. SPECIFIC EXAMPLES OF ELIMINATION OF COMPETITION ENABLING EXTRACTION OF SUPRACOMPETITIVE ROYALTIES

124. 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:



125. 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.

126. 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.[55]

A. Network-based Voice Messaging

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

128. Defendants have aggregated patents in an antitrust market for patents purporting to cover network-based voice messaging capabilities, the "Network-based Voice Messaging Patents Market."[56] 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.

129. Among the substitute patents Defendants 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, U.S. Patent No. 8,995,433, and U.S. Patent No. 7,920,579, all of which purport to cover alternative techniques to enable multiple recipients to access a voice message.

130. U.S. Patent No. 7,020,252 ("the '252 patent") is titled "Group Audio Message

[55] 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.

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

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).

131. 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 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.

132. 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.

133. 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.

134. 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.

135. 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.

136. 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.

137. 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.

138. 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.

139. 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.

140. 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.

141. Defendants' 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 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.

142. That lessening of competition is reflected by the evidence of supracompetitive royalties sought and received by Defendants. Whereas the prior owners of the '252 patent (Philips) and the '5890 patent, the '433 patent, the '723 patent, and/or the '622 patent (Ayalogic, then Empire IP) never asserted these patents because of the competitive constraints they faced, Defendants have pursued numerous assertions and secured multiple settlements for substantial royalties.

143. 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.);
- *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.).

144. 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.

145. 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.

146. 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 Corporation*, No. 8:19-cv-00780 (C.D. Cal.).

147. 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.

148. 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.

149. 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.

150. 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.[57] The case was stayed pending *inter partes* review proceedings. Ultimately, the PTAB's Final Written Decisions

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

declared all asserted claims of all asserted patents unpatentable.[58]

151. 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.[59] 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. Defendant Uniloc 2017's estimated damages for Apple's alleged infringement of the '252 patent are $489,607,520. This damages demand is significantly more than the original owner of the '252 patent—Philips—has demanded for other of its patents. [redacted] In a July 22, 2020 Final Written Decision, the PTAB declared all asserted claims of the '252 patent unpatentable.[60]

152. The supracompetitive licensing returns Fortress's PAEs 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

[58] *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).

[59] *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.).

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

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 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.

153. 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.

B. Remote Software Updates

154. As another example, 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.

155. 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.

156. Among the substitute patents Defendants 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.

157. 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.

158. 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.

159. 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.

160. 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.

161. 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.

162. 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.

163. 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.

164. 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.

165. 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. For example, as detailed further below, Defendants' aggregation of patents in the Remote Software Updates Patents Market has reduced competition in that market, leading to inflated royalties and decreased licensing output in the market. 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.

166. That lessening of competition is reflected by the evidence of supracompetitive royalties sought and received by Defendants following the aggregations. Whereas the prior owners of the '088 patent (Philips, then Pendragon Wireless) and the '228 patent (IBM) never asserted these patents because of the competitive constraints they faced, Defendants have pursued numerous assertions of these patents and the substitute '852 patent and secured at least one settlement for substantial royalties.

167. 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.).

168. 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.

169. 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.

170. 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.).

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

172. 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.[61] 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.[62] Ultimately, both actions ended with settlements between Seven Networks and Google.

173. 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.

174. 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.[63] 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 *inter partes* review proceedings, followed by an appeal to the United States Court of Appeals for

[61] *Seven Networks, LLC v. Google LLC*, No. 2:17-cv-00442 (E.D. Tex. May 17, 2017).
[62] *Google LLC v. Seven Networks, LLC*, No. 3:17-cv-04600 (N.D. Cal. Aug. 10, 2017) (WHO).
[63] *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).

the Federal Circuit, the case resumed. Defendant Uniloc 2017's estimated damages for Apple's infringement of the '852 patent are between $756,709,869 and $1,475,852,582.[64] This is far more than the original owners of other patents in the Remote Software Update Patents Market—Philips with respect to the '088 patent and IBM with respect to the '228 patent—have sought for other patents. [redacted]

175. 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.[65] 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.[66]

176. The supracompetitive licensing returns 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 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

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

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

177. 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

178. As another example, Fortress, the Uniloc Defendants, Seven Networks, and IXI IP have aggregated patents relating to mobile device-to-device communication. 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.

179. Defendants have aggregated patents in an antitrust market for patents purporting to cover mobile device-to-device communication capabilities, the "Mobile Device-to-Device Communication Patents Market." The Mobile Device-to-Device Communication 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 capabilities compete with one another to license patents to suppliers of such devices and supporting software.

180. Among the substitute patents Defendants have aggregated in the Mobile Device-to-Device Communication Patents Market are U.S. Patent No. 7,136,999, U.S. Patent No. 9,712,986, U.S. Patent No. 8,018,877, 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, and U.S. Patent No. 7,551,593, all of which purport to cover alternative techniques to establish communication between multiple devices that are connected via a network.

181. 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.

182. 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.

183. 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).

184. 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.

185. 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.

186. 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.

187. 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.

188. On its face, the '127 patent is assigned to 3Com Corporation ("3Com Corp."). It has the same assignment history as the '616 patent: 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.

189. 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.

190. 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.

191. 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.

192. 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.

193. 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.

194. 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.

195. In addition to the patents discussed immediately above, which are substitutes for one another, Defendant Seven Networks has obtained an additional patent relating to mobile device-to-device communication that is a complement to, and possibly a substitute for, the '999

patent, the '986 patent, the '877 patent, the '127 patent, the '134 patent, the '008 patent, the '097 patent, and the '593 patent.

196. 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.

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

198. Defendants' aggregation of patents (including at least eight substitute patents and one complementary and/or substitute patent) in the Mobile Device-to-Device Communication 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 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.

199. That lessening of competition is reflected by the evidence of supracompetitive royalties sought and received by Defendants following the aggregations. Whereas the prior owners of the '999 patent (Philips Electronics, IPG Electronics 503, then Pendragon Wireless), the '877 patent (Daniel Lin, then Pendragon Wireless), and the '127 patent (3Com Corp., then HP), and the '134 patent (3Com Corp., then HP) never asserted these patents because of the competitive

constraints they faced, the Uniloc Defendants have pursued numerous assertions and secured at least one settlement for substantial royalties.

200. Specifically, the Uniloc Defendants (under Fortress's control) 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.).

201. 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.

202. 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.).

203. 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.).

204. Apple has been injured by the elimination of competition resulting from Defendants' aggregation of patents in the Mobile Device-to-Device Communication 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, the Uniloc Defendants, and Seven Networks 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 Patents Market against them.

205. 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.[67] 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.

206. 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.[68] 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. Defendant Uniloc 2017 estimates, as provided in damages contentions, that damages for Apple's alleged infringement of the '999 patent are at least $162,240,692.

207. 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.[69] The case was transferred to the Northern District of California, where the case was stayed pending *inter partes* review proceedings.

208. On April 10, 2019, Defendant Seven Networks sued Apple in the Eastern District

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[67] *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).

[68] *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).

[69] *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).

of Texas. Defendant 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 Apple Push Notification Service functionality, infringe the '176 patent.[70] Defendant Seven Networks also alleged infringement of 14 additional patents. Defendant Seven Networks' estimated damages for Apple's infringement of the '176 patent alone are approximately [redacted].

209. The supracompetitive licensing returns Fortress's PAEs have 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 Patents Market, even though the prior owners of the 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.

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

D. Local Cache Management

211. As yet another example, Fortress, the Uniloc Defendants, and VLSI have aggregated patents relating to local cache management. Local cache management enables computer processors to store and retrieve information more efficiently. These techniques include selectively placing information in memory according to how recently or frequently that information is used. Local cache management is commonly used in electronic devices containing memory, and there is no close substitute for the functionality.

212. Fortress, the Uniloc Defendants, and VLSI have aggregated patents in an antitrust market for patents purporting to cover local cache management capabilities, the "Local Cache

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

Management Patents Market." The Local Cache Management 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 local cache management compete with one another to license patents to suppliers of such devices.

213. Among the substitute patents Defendants have aggregated in the Local Cache Management Patents Market are U.S. Patent No. 6,301,641, 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.

214. 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 "minimiz[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.

215. 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.

216. 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.

217. 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.

218. 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.

219. On its face, the '009 patent is assigned to Freescale Semiconductor, Inc. ("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.

220. In addition to the patents discussed immediately above, which are substitutes for one another, VLSI has acquired several additional patents directed to caching improvements that are complements to, and possibly substitutes for, the '641 patent and '009 patent.

221. 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.

222. 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.

223. 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.

224. 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.

225. Defendants' aggregation of patents in the Local Cache Management Patents Market (including at least three substitute patents and four complementary and/or substitute patents) has reduced competition in that market, leading to inflated royalties and decreased licensing output. For example, the '641 patent and the '009 patent both purport to cover techniques for improving local cache performance. Whereas the '641 patent achieves the improvement by optimizing the placement of information in a cache, the '009 patent obtains improved performance by optimizing how cache misses are handled. Accordingly, the cache placement method of the '641 patent is a substitute for the cache miss handling method of the '009 patent, and vice versa. When the '641 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.

226. That lessening of competition is evidenced by the supracompetitive royalties sought by Defendants. Whereas the prior owners of the '014 patent (Freescale), the '331 patent (NXP B.V.), and the '357 patent (Freescale, then NXP) never asserted these patents because of the competitive constraints they faced, Defendants have pursued multiple assertions.

227. Specifically, Defendant VLSI, under the control of Fortress, has pursued a litigation campaign based on these patents.

228. As part of the VLSI California Action described above, Defendant 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.[71] 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. 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. That amount significantly exceeds what Freescale sought for this very patent. As discussed above, [redacted] VLSI's damages estimate 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

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

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).

229. As part of the VLSI Delaware Action described above, Defendant VLSI alleged that Intel chipsets infringe the '331 patent.[72] 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. The damages estimates VLSI has disclosed publicly in connection with the VLSI Delaware Action are exorbitant—as discussed above, VLSI disclosed that it would seek billions. This amount is 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

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

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).

230. And as part of the VLSI Texas Actions described above, Defendant VLSI has alleged that Intel's microprocessors infringe the '357 patent.[73] Defendant VLSI also accused Intel of infringing seven additional patents in these actions. Intel sought VLSI's permission to disclose (under seal) the damages claim 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. The damages claims VLSI has disclosed publicly in connection with its assertion of other patents obtained from the same prior owner are exorbitant: as discussed above, VLSI disclosed that it would seek $7.1 billion in a suit involving eight patents and billions in a suit involving five patents. As discussed in paragraph 228 above, these amounts significantly exceed what Freescale sought for this very patent and other of its patents relating to microprocessor features.

231. Intel has been injured by the elimination of competition resulting from Fortress, Uniloc 2017, and VLSI's aggregation of patents in the Local Cache Management 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 Local Cache

[73] *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.).

Management Patents Market against them.

232. The supracompetitive licensing returns 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 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.

233. Defendants' demands show that Fortress has the power to control prices in the Local Cache Management Patents Market. As detailed above, VLSI has sought billions of dollars from Intel.

E. Shared Memory Access

234. As another example, Defendants Fortress, the Uniloc Defendants, and VLSI have aggregated patents relating to shared memory access techniques. Shared memory access techniques provide a way for electronic devices or components thereof in which memory is shared by multiple processors to handle requests to access that shared memory. Specifically, when multiple requests are received simultaneously, shared memory access techniques are used to 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.

235. Defendants have aggregated patents in an antitrust market for patents purporting to cover shared memory access techniques, the "Shared Memory Access Patents Market." The Shared Memory Access 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 shared memory access capabilities compete with one another to license patents to suppliers of such devices.

236. Among the substitute patents Defendants have aggregated in the Shared Memory Access Patents Market are U.S. Patent No. 5,659,687, U.S. Patent No. 7,023,850, and U.S. Patent No. 7,606,983, all of which purport to cover alternative techniques to resolving multiple concurrent access requests for a shared memory.

237. 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.

238. 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.

239. 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.

240. 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.

241. 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.

242. 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.

243. Defendants' aggregation of patents in the Shared Memory Access Patents Market (including at least three substitute patents) has reduced competition in that market, leading to inflated royalties and decreased licensing output. For example, the '687 patent purports to cover a priority-based arbitration method for handling multiple concurrent requests to access a shared memory. Meanwhile, the '850 patent purports to cover a method for handling multiple concurrent request to access a shared memory using input and output subqueues. Still further, the '983 patent purports to cover a method for handling multiple concurrent requests to access a shared memory using a controller to place the requests in a sequential order. These three approaches for handling concurrent access requests—priority-based arbitration, input and output subqueues, and sequential ordering—are substitutes for one another. When the '687, '850, 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.

244. That lessening of competition is reflected by the evidence of supracompetitive royalties sought by Defendants. Whereas the prior owners of the '687 patent (ETRI and IPG Electronics 502, then Pendragon Electronics, then Phoenicia), and the '850 patent (ETRI and IPG Electronics 502, then Pendragon Electronics), and the '983 patent (NXP B.V.) never asserted these patents because of the competitive constrains they faced, Defendant VLSI has pursued a lawsuit involving the '983 patent.

245. Intel has been injured by the elimination of competition resulting from Defendants' aggregation of patents in the Shared Memory Access 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 Shared Memory Access Patents Market against them.

246. As described above, Defendant VLSI filed suit against Intel on March 1, 2019 asserting the '983 patent and five other patents.[74] 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.[75] 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.

247. Intel sought VLSI's permission to disclose (under seal) the damages it claims for Intel's alleged infringement of the '983 patent, as well as the financial terms of its purchase of the patent from NXP; however, VLSI refused that consent. The damages estimates VLSI has

[74] *VLSI Technology LLC v. Intel Corp.*, No. 1:19-cv-00426 (D. Del. Mar. 1, 2019).
[75] *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.).

disclosed publicly in connection with its assertion of other patents obtained from the same prior owner against Intel have been exorbitant—as discussed above, VLSI disclosed that it would seek $7.1 billion in a suit against Intel involving eight patents and billions in a suit against Intel involving five patents. This amount is 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).

248. The supracompetitive licensing returns 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 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.

249. Defendants' demand also shows that Fortress has the power to control prices in the Shared Memory Access 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. Device Authorization

250. As another example, Fortress, the Uniloc Defendants, INVT, VLSI, Seven Networks, and IXI IP have aggregated patents that purport to cover ways to handle device authorization. Device authorization is a means to restrict access in a computer network to only authorized, trusted devices. Device authorization is commonly used in computer networks to protect data integrity and security, and there is no close substitute for device authorization techniques.

251. Fortress, the Uniloc Defendants, INVT, VLSI, Seven Networks, and IXI IP have aggregated patents in an antitrust market for patents purporting to cover device authorization capabilities, the "Device Authorization Patents Market." The Device Authorization 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 device authorization capabilities compete with one another to license patents to suppliers of such devices and supporting software.

252. 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, U.S. Patent No. 6,856,616, U.S. Patent No. 7,039,033, and U.S. Patent No. 7,295,532, all of which purport to cover alternative techniques to restrict access to network resources in a computer

network.

253. 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" for Internet Protocol version 6. Its claims are directed to a three-party device authorization scheme.

254. 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.

255. 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.

256. 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.

257. 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.

258. 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, Defendant Seven Networks). This conversion was executed on July 14, 2015.

259. 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 only authorized entities.

260. 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.

261. 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.

262. 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.

263. 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[] 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.

264. 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.

265. 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.

266. 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.

267. 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.

268. 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.

269. 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.

270. 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.

271. In addition to the patents discussed immediately above, which are substitutes for one another, the Uniloc Defendants 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, the '616 patent, the '033 patent, and the '532 patent.

272. 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." 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.

273. 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 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." 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.

274. 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." 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.

275. 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." 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.

276. 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." 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.

277. 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." 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.

278. 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." 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.

279. 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." 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.

280. Defendants' aggregation of patents in the Device Authorization Patents Market (including at least nine substitute patents and eight complementary and/or substitute patents) has reduced competition in that market, leading to inflated royalties and decreased licensing output. For example, the '907 patent purports to cover a method of granting access privileges to a mobile device based on a "digital fingerprint" of that device. Defendants have also asserted that the '616 patent covers a method of granting access privileges to a mobile device based on that device's "part number" and a configuration associated therewith. Using digital fingerprints to grant access privileges to a mobile device is a substitute for using a part number, and vice versa. When the '907 and '616 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.

281. That lessening of competition is reflected by the evidence of supracompetitive royalties sought by Defendants. Whereas the prior owners of the '633 patent, the '616 patent, the '033 patent, and the '532 patent never asserted them because of the competitive constraints they faced, VLSI, the Uniloc Defendants, and IXI IP have pursued litigation based on these patents.

282. 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.[76] VLSI also asserted four additional patents. A year into the case, VLSI stated that its damages claim would be for billions of dollars. 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.

283. On April 3, 2017, Uniloc USA and Uniloc Luxembourg, under the control of

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

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.[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, and the plaintiffs ultimately voluntarily dismissed the '976 patent from the case.

284. 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.[78] 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.[79] The case has been transferred to the Northern District of California, where it is currently pending. Uniloc 2017's estimated damages for Apple's alleged infringement of the '616 patent are $2 per allegedly infringing device, which Uniloc 2017 claims is in the hundreds of millions and therefore yields a damages claim in the hundreds of millions of dollars.

285. 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

[77] *Uniloc USA, Inc. v. Apple Inc.*, No. 2:17-cv-00258 (E.D. Tex. Apr. 3, 2017).
[78] *Uniloc 2017 LLC v. Apple Inc.*, No. 1:18-cv-00851 (W.D. Tex. Oct. 8, 2018).
[79] *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).

- *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).

286. 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 challenged claims of the '033 patent and all but one challenged claim of the '532 patent.[80] In December 2016, the PTAB found all instituted claims unpatentable.[81] Additional details regarding IXI IPs efforts to obtain additional claims through reexamination for assertion in the litigation against Apple are discussed in paragraphs 113-117 above. Ultimately, the actions were dismissed following joint stipulations of dismissal without prejudice.

287. Intel and Apple have been injured by the elimination of competition resulting from Defendants' aggregation of patents in the Device Authorization 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 Device Authorization Patents Market against them.

288. The supracompetitive licensing returns 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

[80] *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).

[81] *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).

Intel, even though the prior owners of the 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.

289. Defendants' demands show that Fortress has the power to control prices in the Device Authorization 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. Health Monitoring

290. As another example, Fortress and the Uniloc Defendants have aggregated patents relating to health monitoring. Health monitoring enables certain electronic devices, such as wearable devices, smartphones, medical devices, or the like, to monitor and process patient data from sensors. Health monitoring sensors are commonly used in such electronic devices, and there is no close substitute for the functionality.

291. Fortress and the Uniloc Defendants have aggregated patents in an antitrust market for patents purporting to cover health monitoring capabilities, the "Health Monitoring Patents Market." The Health Monitoring 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 health monitoring capabilities compete with one another to license patents to suppliers of such devices and supporting software.

292. Among the substitute patents Defendants have aggregated in the Health Monitoring 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.

293. 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.

294. On June 9, 2017, inventors Kevin Schwieger and Jack Stubbs assigned the '220 patent to Red Dragon Innovations LLC ("Red Dragon"). On July 28, 2017, the same inventors assigned the '220 patent to Paragon Solutions LLC ("Paragon Solutions"), which, that same day, assigned it to 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.

295. 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.

296. 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.

297. 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.

298. 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.

299. 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.

300. 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 . . . ."

301. 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.

302. 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 . . . ."

303. 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 . . . ."

304. 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."

305. 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).

306. 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.

307. Defendants' aggregation of patents in the Health Monitoring 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 processing patient physiological data received from a health monitoring sensor. Specifically, the '220 patent purports to cover a display-driven method in which the physiological parameters are displayed to a user, whereas the '403 patent discloses an alert-driven method in which alerts are generated in response to events associated with the physiological parameters. These display-driven and alert-driven means for processing patient physiological data 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.

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

309. 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.).

310. 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.

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

312. Apple has been injured by the elimination of competition resulting from Fortress and the Uniloc Defendants' aggregation of patents in the Health Monitoring 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 Health Monitoring Patents Market against them.

313. 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 Health Monitoring 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.[82] 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.[83] Moreover, nearly every claim of the '556 patent was found invalid as indefinite in Uniloc USA and Uniloc Luxembourg's case against Samsung.[84] Uniloc USA and Uniloc Luxembourg have contended that they are entitled to damages of between $1.41 and $2.75 per Apple product for total damages in the range of $375 to $732 million. The case is stayed pending *inter partes* review related to Case Nos. 4:18-cv-00361 and

[82] *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).
[83] *Uniloc USA, Inc. v. Apple Inc.*, 4:18-cv-00362 (N.D. Cal.) (PJH), Dkt. 120-2.
[84] 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.

4:18-cv-00364 (N.D. Cal.), two other cases, detailed below, in which Uniloc Luxembourg and Uniloc USA assert patents in the Health Monitoring Patents Market.

314. 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 Health Monitoring Patents Market—the '646 patent.[85] Uniloc Luxembourg and Uniloc USA alleged that Apple products that implement "Raise to Wake" functionality infringe the '646 patent. 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. After the case was transferred to the Northern District of California, it was stayed pending *inter partes* review. In a final written decision issued on May 21, 2019, the PTAB concluded that all challenged claims of the '646 patent are unpatentable.[86] The case remains stayed pending appellate review of the PTAB's decision.

315. 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 Health Monitoring Patents Market—the '508, the '2723, and the '902 patents.[87] 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 $167 million and $326 million for each allegedly infringed patent. After the case 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,[88] except for one claim for which it declined to institute *inter partes* review.[89] Similarly, the PTAB found all challenged claims of the '2723 patent unpatentable,[90] except for two claims for which it declined to institute

[85] *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).
[86] *Apple Inc. v. Uniloc 2017 LLC*, IPR2018-00289, Paper No. 22 (PTAB May 21, 2019).
[87] *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).
[88] *Apple Inc. v. Uniloc 2017 LLC*, IPR2018-00387, Paper No. 21 (PTAB June 17, 2019).
[89] *Apple Inc. v. Uniloc Luxembourg SA*, IPR2018-01026, Paper No. 9 (PTAB Oct. 18, 2018).
[90] *Apple Inc. v. Uniloc 2017 LLC*, IPR2018-00389, Paper No. 20 (PTAB June 17, 2019).

inter partes review.[91] And the PTAB found all but one challenged claim of the '902 patent unpatentable.[92] The case remains stayed pending appellate review of the PTAB's decisions.

316. 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,[93] another patent in the Health Monitoring 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.[94] The case remains stayed pending appellate review of the PTAB's decision.

317. The supracompetitive licensing returns 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 Health Monitoring 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 Health Monitoring 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 Defendants' patent aggregation and far exceeds the actual value of the patents based on their technical and commercial merits.

318. Defendants' demands also show that Fortress has the power to control prices in the Health Monitoring Patents Market. As detailed above, Fortress-backed entities have sought

[91] *Apple Inc. v. Uniloc Luxembourg SA*, IPR2018-01027, Paper No. 8 (PTAB Oct. 18, 2018).
[92] *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).
[93] *Uniloc USA, Inc. et al v. Apple Inc.*, No. 2:17-cv-00708 (E.D. Tex.).
[94] *Apple Inc. v. Uniloc 2017 LLC*, IPR2018-00294, Paper No. 20 (PTAB Apr. 12, 2019).

hundreds of millions of dollars from Apple.

H. MOSFET Channel Fabrication

319. As another example, 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.

320. 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.

321. 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.

322. 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.

323. 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.

324. 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.

325. 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.

326. 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.

327. 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.

328. 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.

329. 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.

330. 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.

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

332. 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 selective doping technique in which an etch mask is selectively doped to control the etch process. On the other hand, the '303 patent discloses a selective placement in which the etch mask is selectively placed with respect to other

MOSFET features to achieve improved process control. Selective doping of an etch mask is a substitute for selective 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.

333. That lessening of competition is reflected by the evidence of supracompetitive royalties sought by Defendants. Whereas the prior owners of the '452 patent and the '303 patent never asserted these patents because of the competitive constraints they faced, Defendant VLSI has pursued a lawsuit involving the '303 patent.

334. 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.

335. 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.[95] 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. The damages estimates VLSI has disclosed publicly in connection with its assertion of the eight patents asserted in the VLSI California Action are

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

exorbitant: as discussed above, VLSI disclosed that it would seek $7.1 billion in that suit. That amount significantly exceeds what Freescale sought for this very patent. As discussed above, [redacted] VLSI's damages estimate 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).

336. 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.[96] 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.

337. The supracompetitive licensing returns 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 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.

338. 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. Digital Rights Management

339. As another example, Fortress, the Uniloc Defendants, and IXI IP have aggregated patents relating to digital rights management. Digital rights management provides a way to protect digital files (*e.g.*, digital media, software, video games, and the like) from unauthorized use. Techniques directed to digital rights management enable a content distributor to enforce software licenses and restrict a user's ability to access and copy the digital files. Digital rights management is a common feature that many content distributors use to protect their digital assets, and there is no close substitute for the functionality.

340. Fortress, the Uniloc Defendants, and IXI IP have aggregated patents in an antitrust market for patents purporting to cover digital rights management capabilities, the "Digital Rights

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

Management Patents Market." The Digital Rights Management 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.

341. 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").

342. 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.

343. 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.

344. 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.

345. 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.

346. 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.

347. 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.

348. 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.[97] The Uniloc entities also asserted three additional patents. Four months after filing the lawsuit, the Uniloc entities voluntarily dismissed their claims without prejudice.

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

349. In addition to the substitute patents in the Digital Rights Management 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.

350. 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 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).

351. 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.

352. 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).

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

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.

354. Defendants' aggregation of patents in the Digital Rights Management 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 protect digital software from unauthorized, unlicensed use. Specifically, the '069 patent purports to cover methods for limiting a user's ability to access the features of a software program. Meanwhile, the '648 patent purports to cover a method for restricting the ability of a user to download software based on device information and user information. Restricting the available features of a software program can be a substitute for restricting the ability to download the software program, 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.

355. 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.

356. Apple has been injured by the elimination of competition resulting from Fortress, the Uniloc Defendants, and IXI IP's aggregation of patents in the Digital Rights Management 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 Digital Rights Management Patents Market against them.

357. The supracompetitive licensing returns 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 Digital Rights Management 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.

358. Defendants' demands also show that Fortress has the power to control prices in the Digital Rights Management Patents Market.

J. Additional Examples of Substitute Patents Aggregated by Defendants

359. In addition to the examples of substitute patents described above, Fortress controls additional substitute patents aggregated across Defendant PAEs. In each of the below Relevant Patents Markets, although none of the patents have yet been asserted by Defendants, Apple and Intel have been injured as a result of the ongoing threat that Defendants will assert such patents.

1. Cryptographic Algorithms Using Modular Multiplication

360. Fortress, the Uniloc Defendants, and VLSI have aggregated patents relating to cryptographic algorithms that use modular multiplication. Cryptographic algorithms are used to improve the security of electronic systems by transmitting and storing data in an encrypted form, and subsequently to decrypt the data for further processing. One common arithmetic operation used in modern cryptographic algorithms is modular multiplication. There is no close substitute for the functionality.

361. Fortress, the Uniloc Defendants, and VLSI have aggregated patents in an antitrust market for patents purporting to cover cryptographic algorithms using modular multiplication, the

"Cryptographic Algorithms Patents Market." The Cryptographic Algorithms 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 rely on cryptographic algorithms using modular multiplication compete with one another to license patents to suppliers of such devices and supporting software.

362. Among the patents Defendants have aggregated are U.S. Patent No. 5,954,788 and U.S. Patent No. 7,395,295, both of which purport to cover alternative techniques to perform modular multiplication operations used in cryptographic algorithms.

363. U.S. Patent No. 5,954,788 ("the '788 patent") is titled "Apparatus for Performing Modular Multiplication" and issued on September 21, 1999. According to its abstract, the '788 patent relates to an apparatus including two multiplicand registers, a multiplier word counter, a partial product calculator, a quotient estimation calculator, a multiplier, a multiplexer, a subtracter, a left word shifter, and a result register. It claims algorithms for multiplier machines, which are used in cryptography.

364. On its face, the '788 patent is assigned to ETRI. On December 26, 2008, ETRI assigned one half of its interest in the '788 patent to IPG Electronics 502. On April 10, 2012, ETRI and IPG Electronics 502 assigned the '788 patent to Pendragon Electronics. On January 31, 2018, Pendragon Electronics assigned the '788 patent to Defendant Uniloc Luxembourg. On May 3, 2018, Defendant Uniloc Luxembourg assigned the '788 patent to Defendant Uniloc 2017.

365. U.S. Patent No. 7,395,295 ("the '295 patent") is titled "Pipeline Core in Montgomery Multiplier" and issued on July 1, 2008. According to its abstract, the '295 patent relates to "multiplying a first long integer entity with a second long integer entity modulo a prime number." Like the '788 patent, it also claims an algorithm for a multiplier machines.

366. On its face, the '295 patent is assigned to NXP B.V. On December 22, 2018, NXP B.V. assigned the '295 patent to Defendant VLSI.

2. DRAM Refreshing

367. As an additional example, Fortress, the Uniloc Defendants, and VLSI have

aggregated patents relating to dynamic random access memory ("DRAM") refreshing. DRAM is a type of memory that is commonly used in a wide variety of electronic systems. DRAM stores information on capacitor plates, which are prone to leakage and need to be refreshed periodically to maintain their state. There is no close substitute for DRAM refreshing functionality.

368. Fortress, the Uniloc Defendants, and VLSI have aggregated patents in an antitrust market for patents purporting to cover DRAM refreshing capabilities, the "DRAM Refreshing Patents Market." The DRAM Refreshing 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 with DRAM refreshing capabilities compete with one another to license patents to suppliers of such devices.

369. Among the patents Defendants have aggregated in the DRAM Refreshing Patents Market are U.S. Patent No. 7,088,632 and U.S. Patent No. 6,807,604, both of which purport to cover alternative techniques to efficiently refresh DRAM memory.

370. U.S. Patent No. 7,088,632 ("the '632 patent") is titled "Automatic Hidden Refresh in a DRAM and Method Therefor" and issued on August 8, 2006. According to its abstract, the '632 patent relates to "[a] fully hidden refresh mode [that] allows for timely refresh operations while [the memory is] operating in cache line mode." The '632 patent is directed to a technique for refreshing a variable stored in DRAM in a fully hidden mode.

371. On its face, the '632 patent is assigned to Freescale. On November 7, 2016, Freescale assigned the '632 patent to NXP as part of the merger between the companies. On December 4, 2017, NXP assigned the '632 patent to Defendant VLSI.

372. U.S. Patent No. 6,807,604 ("the '604 patent") is titled "Method of Refreshing a Dynamic Memory" and issued on October 19, 2004. According to its abstract, the '604 patent relates to "[a] method of refreshing a dynamic memory intended for storing variables involved in operations performed by a processor, includes a step of planning [] an order and a timing of the operations." The '604 patent is directed to a technique for refreshing a variable stored in DRAM at a forecasted instant in time.

373. On its face, the '604 patent is assigned to Philips. On January 30, 2009, Philips assigned the '604 patent to IPG Electronics 503. On April 10, 2012, IPG Electronics 503 assigned the '604 patent to Pendragon Wireless. On January 31, 2018, Pendragon Wireless assigned the '604 patent to Defendant Uniloc Luxembourg. On May 3, 2018 Defendant Uniloc Luxembourg assigned the '604 patent to Defendant Uniloc 2017.

3. Input/Output Pads

374. As another example, Fortress, the Uniloc defendants, and VLSI have aggregated patents relating to Input/Output (I/O) pads. I/O pads are used to transfer electrical signals (*e.g.*, data and power signals) between an integrated circuit device and external components. Virtually all integrated circuit devices include one or more I/O pads, and there is no close substitute for the functionality.

375. Fortress, the Uniloc defendants, and VLSI have aggregated patents in an antitrust market for patents purporting to cover I/O pads, the "I/O Pad Patents Market." The I/O Pad 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 integrated circuit devices with I/O pads compete with one another to license patents to suppliers of such devices.

376. Among the patents Defendants have aggregated in the I/O Pad Patents Market is U.S. Patent No. 7,836,369 and U.S. Patent No. 6,774,697, both of which purport to cover alternative techniques to configure electrical signals sent via input/output pads.

377. U.S. Patent No. 7,836,369 ("the '369 patent") is titled "Device and Method for Configuring Input/Output Pads" and issued on November 16, 2010. According to its abstract, the '369 patent relates to "determining a current configuration of multiple IO pads of an integrated circuit and . . . generating multiple boundary scan register words that comprise Configuration information." Its claims are directed to methods for configuring a configurable I/O pad circuit.

378. On its face, the '369 patent is assigned to Freescale. On November 7, 2016, Freescale assigned the '369 patent to NXP as part of the merger between the companies. On April

12, 2017, NXP assigned the '369 patent to Defendant VLSI.

379. U.S. Patent No. 6,774,697 ("the '697 patent") is titled "Input and Output Port Circuit" and issued on August 10, 2004. According to its abstract, the '697 patent relates to a port circuit where "[t]he high voltage and the low voltage can be simultaneously driven using only a single output driving circuit and the single output driving circuit is constructed in multiple stages and is selectively driven by the output control register." Its claims are directed to reducing power consumption by an I/O port circuit.

380. On its face, the '697 patent is assigned to ETRI. On December 26, 2008, ETRI assigned one half of its interest in the '697 patent to IPG Electronics 502. On April 10, 2012, ETRI and IPG Electronics 502 assigned the '697 patent to Pendragon Electronics. On January 31, 2018, Pendragon Electronics assigned the '697 patent to Defendant Uniloc Luxembourg. On May 3, 2018, Defendant Uniloc Luxembourg assigned the '697 patent to Defendant Uniloc 2017.

4. Fingerprint Authentication

381. As another example, Fortress and the Uniloc Defendants have aggregated patents relating to fingerprint authentication. Fingerprint authentication enables individuals to be securely identified based on images of their fingerprints. Fingerprint authentication is commonly incorporated into electronic devices, such as smartphones and other devices to provide security, and there is no close substitute for this functionality.

382. Fortress and the Uniloc Defendants have aggregated patents in an antitrust market for patents purporting to cover fingerprint authentication capabilities, the "Fingerprint Authentication Patents Market." The Fingerprint Authentication 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 with fingerprint authentication capabilities compete with one another to license patents to suppliers of such devices and supporting software.

383. Among the patents Defendants have aggregated are U.S. Patent No. 7,079,670, U.S. Patent No. 6,289,112, and U.S. Patent No. 6,118,890, all of which purport to cover alternative

techniques to identify an individual based on a fingerprint image.

384. U.S. Patent No. 7,079,670 ("the '670 patent") is titled "Apparatus and Method for Authenticating a User by Employing Feature Points of a Fingerprint Image of the User" and issued on July 18, 2006. According to its abstract, the '670 patent relates to "a fingerprint image input circuit [that] scans a fingerprint of a user to be registered to provide a first fingerprint image and a fingerprint of a user to be authenticated to provide a second fingerprint image." Its claims are directed to techniques for authenticating a fingerprint image by comparing features in the image with registered features.

385. On its face, the '670 patent is assigned to ETRI. On December 26, 2008, ETRI assigned one half of its interest in the '670 patent to IPG Electronics 502. On April 10, 2012, ETRI and IPG Electronics 502 assigned the '670 patent to Pendragon Electronics. On January 31, 2018, Pendragon Electronics assigned the '670 patent to Defendant Uniloc Luxembourg. On May 3, 2018, Defendant Uniloc Luxembourg assigned the '670 patent to Defendant Uniloc 2017.

386. U.S. Patent No. 6,289,112 ("the '112 patent") is titled "System and Method for Determining Block Direction in Fingerprint Images" and issued on September 11, 2001. According to its abstract, the '112 patent relates to "[a] reliable estimate of image pixel (fingerprint ridge) orientations, and block orientations for a given block [that] is determined by finding an optimal block size in an area of an image, *e.g.*, a fingerprint image." Its claims are directed to techniques for authenticating a fingerprint image by analyzing intensity gradients in the image.

387. On its face, the '112 patent is assigned to IBM. On September 26, 2007, IBM assigned the '112 patent to IPG Healthcare. On April 10, 2012, IPG Healthcare assigned the '112 patent to Pendragon Networks. On January 31, 2018, Pendragon Networks assigned the '112 patent to Defendant Uniloc Luxembourg. On May 3, 2018, Defendant Uniloc Luxembourg assigned the '112 patent to Defendant Uniloc 2017.

388. U.S. Patent No. 6,118,890 ("the '8890 patent") is titled "System and Method for Broad Classification of Biometric Patterns" and issued on September 12, 2000. According to its abstract, the '8890 patent relates to "[a] computer implemented method [that] may be used in

classifying and identifying finger prints." Its claims are directed to techniques for authenticating a fingerprint image by analyzing intersections of fiducial lines.

389. On its face, the '8890 patent is assigned to IBM. On September 26, 2007, IBM assigned the '8890 patent to IPG Healthcare. On April 10, 2012, IPG Healthcare assigned the '8890 patent to Pendragon Networks. On January 31, 2018, Pendragon Networks assigned the '8890 patent to Defendant Uniloc Luxembourg. On May 3, 2018, Defendant Uniloc Luxembourg assigned the '8890 patent to Defendant Uniloc 2017.

K. Defendants' Assertions of Portfolios Encompassing Substitute Patents

390. 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.[98] 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.

391. 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

[98] *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).

from independent holders of substitute patents that were available before Defendants' patent aggregations occurred.

392. 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.[99]

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

IV. SEP TRANSFER SCHEMES

394. As described above, INVT and Uniloc 2017 hold what they claim are SEPs for cellular standards and that are subject to commitments to license on FRAND terms.

A. Cellular Standards and the Risks of Standard Setting

395. Standards, such as LTE, are created and publicly distributed by standard setting organizations ("SSOs"). Industry standards provide potential benefits by allowing devices made by different companies to communicate with each other because these devices support the same standard. But standards also present risks of harm to competition and consumers when patent holders claim to have patents essential to the standards—*i.e.*, the standard cannot be practiced without using the patent—and exploit those patents to demand excessive royalties or hold up

[99] *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.").

companies that use the standard. Before a standard is set, the SSO can choose different ways of implementing particular functionality within the standard. But once the standard is set and technology to perform a particular functionality is incorporated in the standard, users of the standard become "locked in" to using that technology through their investment in products and services that support the standard. This "lock-in" effect creates a risk that patent holders claiming to have essential patents will attempt to exploit their patents by demanding excessive royalties or seeking to enjoin the use of their patents. In particular, SEP holders may seek royalties that do not reflect the incremental value of their patents (which may cover only a fraction of the matter addressed in a given standard) but instead are based on the user's investments in supporting the standard.

396. The risk of exploitative SEP licensing conduct is exacerbated by the fact that SSOs typically make no evaluation of whether a claimed-essential patent is actually essential.

397. In response to this risk of exploitative behavior, SSOs have adopted licensing commitments that govern patents claimed to be essential to a standard. Many SSOs impose a requirement that patent holders claiming to have essential patents timely disclose those patents to the SSO and commit to license them on FRAND terms and conditions.

398. FRAND royalties for SEPs should reflect the ex ante value of the technology covered by the SEP before standardization, when alternative means of performing the functions purportedly covered by the patented technology were available. That is, FRAND royalties should be apportioned so that they do not reflect any value attributable to adoption in the standard of the feature covered by the SEP or unpatented features within the standard.

B. ETSI and Its Intellectual Property Rights Policy

399. ETSI is an independent, non-profit SSO that produces globally-accepted standards for the telecommunications industry. ETSI has more than 800 members from over 60 countries across five continents. ETSI created or helped to create many telecommunication standards, including the 2G (*e.g.*, GSM), 3G (*e.g.*, WCDMA/UMTS), and 4G (LTE) cellular communication standards.

400. Along with six other regional SSOs, ETSI is an Organizational Partner in the Third Generation Partnership Project ("3GPP"). 3GPP produces technical specifications that are adopted as standards by Organizational Partners, such as ETSI. 3GPP was created to oversee work on global 3G cellular specifications and has subsequently worked on creating 4G specifications. The 3GPP Organizational Partners agreed that members of a particular Organizational Partner would be bound by the intellectual property rights ("IPR") policy of that Organizational Partner when participating at 3GPP.

401. ETSI has adopted an IPR Policy, incorporated as Annex 6 of the ETSI Rules of Procedure. The ETSI IPR Policy is governed by the laws of France and provides that "[a]ny right granted to, and any obligation imposed on, a MEMBER which derives from French law and which are not already contained in the national or supranational law applicable to that MEMBER is to be understood as being of solely a contractual nature."

402. Among other requirements, the ETSI IPR Policy obligates members to disclose to ETSI and its members patents and patent applications that a member believes are or may become essential to an ETSI standard. Once such a disclosure is made, the member is requested to submit an irrevocable undertaking confirming its willingness to license the IPRs it has disclosed on FRAND terms and conditions.

403. Specifically, Clause 4.1 of the ETSI IPR Policy provides as follows regarding the disclosure obligation at ETSI:

> Subject to Clause 4.2 below, each MEMBER shall use its reasonable endeavours, in particular during the development of a STANDARD or TECHNICAL SPECIFICATION where it participates, to inform ETSI of ESSENTIAL IPRs in a timely fashion. In particular, a MEMBER submitting a technical proposal for a STANDARD or TECHNICAL SPECIFICATION shall, on a bona fide basis, draw the attention of ETSI to any of that MEMBER's IPR which might be ESSENTIAL if that proposal is adopted.

404. In its second sentence, Clause 4.1 imposes a "particular" requirement on members submitting a technical proposal to disclose the existence of any potentially essential IPR when a proposal is made and no later than when the standard has been adopted.

405. The disclosure requirement under Clause 4.1 of the ETSI IPR Policy is intended to ensure that when ETSI members (or participants at 3GPP) are deciding on the content of a particular standard specification, they understand that there is IPR that may potentially be implicated if certain technology is standardized. This knowledge allows members to make choices regarding technologies to standardize with a more informed understanding of the consequences of their choices. ETSI and its members rely on the safeguards of the disclosure and FRAND licensing obligation to ensure the viability and commercial potential of the standards adopted by ETSI.

406. The ETSI IPR Policy further requests that SEP owners submit an irrevocable written undertaking that they are prepared to grant irrevocable licenses on "fair, reasonable, and non-discriminatory" or FRAND terms and conditions. Clause 6.1 states:

> When an ESSENTIAL IPR relating to a particular STANDARD or TECHNICAL SPECIFICATION is brought to the attention of ETSI, the Director-General of ETSI shall immediately request the owner to give within three months an irrevocable undertaking in writing that it is prepared to grant irrevocable licences on fair, reasonable and non-discriminatory ("FRAND") terms and conditions under such IPR to at least the following extent:
>
> ● MANUFACTURE, including the right to make or have made customized components and sub-systems to the licensee's own design for use in MANUFACTURE;
>
> ● sell, lease, or otherwise dispose of EQUIPMENT so MANUFACTURED;
>
> ● repair, use, or operate EQUIPMENT; and
>
> ● use METHODS.
>
> The above undertaking may be made subject to the condition that those who seek licences agree to reciprocate.

407. ETSI's IPR Policy was designed to benefit all ETSI members, as well as all other parties (including manufacturers and consumers) that supply products that support an ETSI standard. In particular, the Policy describes in Clause 3.1 that it has the objective to "reduce the risk" to those implementing the standards or other technical specifications "that investment in the preparation, adoption and application of the STANDARDS could be wasted as a result of an ESSENTIAL IPR for a STANDARD or TECHNICAL SPECIFICATION being unavailable."

408. Through disclosure of potentially essential IPRs and obtaining FRAND commitments for them, ETSI can include technology in its standards that may be covered by IPRs with confidence that hold-up tactics by owners of declared SEPs will not undermine the subsequent widespread adoption of the standards. If ETSI becomes aware of a potentially essential IPR for which a FRAND undertaking is not made, the IPR Policy requires that ETSI avoid standardizing the technology claimed by that IPR. In particular, Section 8.1.1 of the ETSI IPR Policy provides that ETSI must take steps to ensure that a "viable alternative technology" is available where IPR cannot be licensed on FRAND terms and conditions:

> Where prior to the publication of a STANDARD or a TECHNICAL SPECIFICATION an IPR owner informs ETSI that it is not prepared to license an IPR in respect of a STANDARD or TECHNICAL SPECIFICATION in accordance with Clause 6.1 above, the General Assembly shall review the requirement for that STANDARD or TECHNICAL SPECIFICATION and satisfy itself that a viable alternative technology is available for the STANDARD or TECHNICAL SPECIFICATION which:
> - is not blocked by that IPR; and
>
> - satisfies ETSI's requirements

409. Apple is an ETSI member through the participation of its European subsidiaries. The ETSI IPR Policy defines a "MEMBER" as including the member's "affiliates," which includes those entities owned or controlled by a member.

C. Holders of Declared SEPs Have Monopoly Power in Input Technology Markets For Standardized Functionalities

410. Each cellular standard developed by ETSI or 3GPP consists of many different technologies that perform a variety of functions. The technologies that perform each of these functions are essential inputs into the manufacture and supply of products and services that support the standards.

411. In the process of developing cellular specifications and standards, ETSI and 3GPP participants choose particular technology to provide each individual function encompassed by the standards. ETSI and 3GPP participants evaluate whether to standardize particular proposed functions and, if so, which viable, alternative competing technologies to select to perform those

functions.

412. Once a standard, like LTE, is adopted, the viability of using alternative technologies that are not standardized to perform functions included in the standard is constrained or eliminated. That is, standardization constrains or eliminates as substitutes all the technologies that would have been capable of performing the functionality in the standard but that were not chosen to perform that function. Parties supplying products that support the standard, such as Apple, become "locked-in" to the standardized technology.

413. If a technology selected for inclusion in the standard is protected by patents, the patent owner controls the supply of that particular input technology for the standard. This is true for each function comprising the standard for which patented technology was selected.

414. The functionality for cellular standards associated with each input technology comprises its own relevant market for antitrust purposes (individually, an "Input Technology Market," and collectively, the relevant "Input Technology Markets"). Fortress, INVT, and Uniloc 2017 hold monopoly power in the various Input Technology Markets for the various functions claimed to be covered by their declared SEPs. That is because, post-standardization, formerly viable alternative technologies are no longer viable because of the lock-in effect of standards discussed above.

415. Cellular standards are employed throughout the world and alternative technologies competing to be incorporated into the cellular standards were offered by suppliers from around the world. Accordingly, the geographic scope of each of the relevant Input Technologies Markets described above is worldwide.

416. SEP holders have the power to raise prices and exclude competition with respect to each of the technologies covered by their patents and incorporated in the relevant standard. An Input Technology Market has high barriers to entry because the standardization process eliminates the viability of alternative technologies as substitutes to perform the standardized functionality in the Input Technology Market.

417. Simply by asserting that they have large portfolios of essential patents, INVT and

Uniloc 2017 can obtain royalties or other licensing terms for the patents above what they could have obtained before ETSI or 3GPP standardized the technology that INVT and Uniloc 2017 claims is covered by their patents. INVT and Uniloc 2017 have such hold-up power because without a license, a party supplying products that support the relevant cellular standards risks being unable to market those products and having its entire business put in peril.

D. Fortress, INVT, and the Uniloc Defendants' Anticompetitive SEP Transfer Schemes

418. Inventergy acquired declared essential SEPs from Panasonic subject to obligations for Inventergy to share with Panasonic the royalties it obtained from licensees. Inventergy, through its wholly-owned subsidiary Inventergy, Inc., transferred these patents to INVT, including, for example, U.S. Patent Nos. 6,366,763, 6,637,001, 6,813,323, 6,940,428, 6,847,828, 5,583,851, 6,336,040, 5,818,869, 6,175,558, 6,697,384, 6,466,563, 6,370,134, RE37,420, 6,760,590, 5,757,870, 5,873,027, 6,295,301, 6,301,237, 6,529,492, 6,370,131, 6,381,445, 6,370,359, 6,487,394, 6,597,894, 7,035,233, 6,584,088, 6,549,526, RE39,954, 6,505,035, 6,973,289, 6,611,676, 6,734,810, 7,339,949, 6,799,053, 7,206,587, 7,460,502, 7,386,321, 6,922,159, 7,636,551, 8,175,604, and 7,535,864 which have directly (or as family members) been declared essential to the UMTS standard, and U.S. Patents Nos. 7,646,702, 8,775,890, 6,760,590, 6,799,053, 7,206,587, 8,238,226, 9,397,794, and 9,015,546 which have directly (or as family members) been declared essential to the LTE standard.

419. Inventergy also acquired declared essential SEPs that originated with Nokia, which Inventergy, through its wholly-owned subsidiary Inventergy, Inc., transferred to INVT. For example, INVT owns U.S. Patent Nos. 7,925,762, 7,065,339, and 7,917,620, which, as family members, have been declared essential to the UMTS standard, U.S. Patent Nos. 7,925,762, 7,623,529, 7,065,339, and 7,917,620 which have directly (or as a family members) been declared essential to the GSM standard, and U.S. Patent No. 7,065,339, which has been declared essential to the LTE standard.

420. Additionally, Inventergy also acquired declared essential SEPs that originated with

Huawei, which Inventergy, through its wholly-owned subsidiary Inventergy, Inc., transferred to INVT. For example, INVT owns U.S. Patent Nos. 7,835,352, 8,213,419, and 8,185,105, which, as a family member to another patent, has been declared essential to the UMTS standard.

421. Uniloc Luxembourg received SEPs that originated with Philips, to which Uniloc Luxembourg granted Uniloc USA rights to be an exclusive licensee, and which it later transferred to Uniloc 2017. For example, Uniloc 2017 owns U.S. Patent Nos. 6,111,438, 6,133,765, 6,167,237, 6,104,354, 6,707,858, 6,363,513, 6,543,025, 6,304,612, 7,161,952, 7,103,070, 6,954,634, 6,965,582, 7,075,917, 7,151,916, 7,049,954, 7,171,206, 7,082,156, 7,212,158, 7,283,832, 7,286,841, 7,308,266, 7,167,487, and 6,868,079,[100] which [redacted]

422. Additionally, Uniloc 2017 received purported SEPs that originated with Philips, including U.S. Patent Nos. 7,016,676, 6,664,891, and 6,519,005, which Uniloc 2017 appears to allege is essential to the UMTS standard in a case against Verizon Communications Inc.[101]; and U.S. Patent No. 6,664,891, which Uniloc 2017 appears to allege is essential to the Bluetooth standard in an action against Samsung Electronics America, Inc.[102]

423. Transferring SEPs from an operating company that supplies its own products and participates in SSOs to a PAE allows the PAE to escape the protections for licensees to which licensors agree through making a FRAND commitment. When an operating company demands royalties for patents it has declared essential to industry standards, it faces bounds on the reach of its demands because it remains an operating company and an SSO participant. As an operating

[100] The Uniloc Defendants have taken the position in litigation against Samsung that U.S. Patent Nos. 7,167,487, and 6,868,079 are essential to mobile communications standards. *See Uniloc USA, Inc. et al. v. Samsung Electronics America, Inc. et al.*, No. 2:18-cv-00044 (E.D. Tex.) (JRG-RSP), Dkt. 65, at 4 ("It is Uniloc's position that the '487 patent is essential to the 3G (HSPA/HSPA+) mobile-phone standard."); *id.* at 2-3 ("It is Uniloc's position that the '079 patent is essential to the LTE mobile-phone standard.").

[101] *Uniloc 2017 LLC et al v. Verizon Communications Inc. et al*, 2:18-cv-00380 (E.D. Tex.) (JRG-RSP), Dkt. 1.

[102] *Uniloc 2017 LLC v. Samsung Electronics America, Inc. et al.*, 2:19-cv-00259 (E.D. Tex.) (JRG-RSP), Dkts. 1 and 24.

company that sells its own products or services, it remains subject to assertion of patents against it by potential licensees. Thus, for example, an operating company would face constraints in demanding non-FRAND royalties or otherwise failing to adhere to a FRAND commitment because it could be subject to reciprocal demands or conduct from other SEP holders.

424. And, as SSO participants, operating companies have reputational interests at stake that may be injured though directly breaching their FRAND commitments. Such conduct will make SSOs and their members less likely to standardize the operating company's technology in future standards. By transferring SEPs to PAEs, operating companies avoid these constraints and enlist PAEs that are not subject to the same constraints to exploit the monopoly power associated with their claimed SEPs.

425. Patent transfer schemes like INVT's and the Uniloc Defendants' frustrate the purposes of the FRAND commitment in another way. By transferring portions of the SEP portfolios of operating companies to PAEs for the purpose and with the effect of driving up transaction costs and evading FRAND commitments, the scheme not only introduces inefficiencies but also makes it impossible for Apple and other device suppliers to license all of an operating company's declared SEPs in a single license. Apple had previously paid Panasonic for a license to certain of its W-CDMA SEPs through the W-CDMA patent pool administered by Sipro Lab Telecom. In addition, Apple entered a license agreement with Philips in 2012 that granted Apple a license to certain Philips patents. But Philips had already transferred one of those patents at the time of the license (without retaining a right to license Apple) and, after further transfers, it ultimately ended up with Uniloc 2017. In litigation against Apple, Uniloc 2017 claims that Apple's cellular devices infringe the transferred patent because they support 3G and LTE standards, thus relying on the purported essentiality of the transferred patent. In litigation between Apple and Philips about the scope of their license, however, Philips claims that the transferred patent is not commercially or technically essential and, therefore, does not fall within the scope of the 2012 license agreement.

426. The transfer of SEPs from operating companies to PAEs to engage in abusive

licensing undermines standard-setting's procompetitive purposes of facilitating wide adoption of industry standards on economically reasonable terms, and, instead, transforms standard-setting into a mechanism for holding up and extracting exorbitant royalties from product suppliers, bringing immediate harm to product suppliers and end consumers through higher prices and reduced innovation and quality. Over the long run, abusive patent transfer schemes, like INVT and the Uniloc Defendants have employed here, chill standard-setting activities and the procompetitive benefits they bring.

427. There is no procompetitive justification for the anticompetitive transfer of SEPs to INVT and the Uniloc Defendants. To the extent INVT and the Uniloc Defendants assert that any procompetitive justifications exist, such purported justifications are outweighed by the anticompetitive effects in the markets alleged herein or could have been obtained in a substantially less restrictive way.

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

428. As alleged above (e.g., paragraphs 29-77 and 124-393), 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.

429. 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. Further, the asserted SEPs held by INVT and Uniloc 2017, by definition, claim to cover essential technology that it would generally not be feasible to design around if they are actually essential.

430. Thus, in addition to the market power resulting from reduction of competition resulting from aggregation of substitute and complement patents, alleged above at, e.g., paragraphs 124-389, 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.

431. 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.

432. 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.

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

433. As set forth above, Fortress and its PAEs possess market power in the Relevant Patents Markets. Further, Fortress, INVT, and Uniloc 2017 possess monopoly power for their SEPs in the Input Technology Markets that perform each of those standardized functions.

434. 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.

435. 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. In addition, Defendants' anticompetitive conduct has enhanced monopoly power in the Input Technology Markets. Fortress and the other Defendants' conduct has harmed and continues to harm competition in interstate commerce.

436. 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 and each of the Input Technology 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.

437. Defendants' illegal conduct causes obvious harm to licensees such as Intel and Apple—*i.e.*, customers in the Relevant Patents Markets and/or in the Input Technology 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. 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. 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.

438. For declared SEPs specifically, Fortress, INVT, and the Uniloc Defendants' FRAND evasion has led to precisely the sort of anticompetitive effects that ETSI's IPR Policy was designed to avoid, leading to inflated prices in Input Technology Markets associated with their declared SEPs, as well as higher prices and reduced innovation and quality for downstream purchasers. The transfer of those SEPs to PAEs in exchange for a share of licensing revenue has imposed exorbitant non-FRAND royalties (or heavy costs in trying to avoid such royalties) on Apple and other suppliers of products that support cellular standards. This has led to inflated prices in Input Technology Markets associated with INVT and the Uniloc Defendants' declared SEPs, as well as higher prices and reduced innovation and quality for consumers of cellular products. Moreover, the illicit SEP transfer scheme has chilled, and, if not enjoined, will continue to chill procompetitive standard-setting, to the detriment of industry and American and other consumers alike.

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)

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

440. As alleged above, particularly at paragraphs 51-77, 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.

441. 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 124-389), and for downstream products sold to consumers. The agreements have substantially affected interstate commerce.

442. 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.

443. 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, IXI IP, and Seven Networks)

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

445. Fortress, Fortress Credit, Uniloc 2017, VLSI, INVT, IXI IP, and Seven Networks (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.

446. 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.

447. 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.

448. 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)

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

450. 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. That conduct is also unfair in that it violates the spirit and policy of the antitrust laws.

451. 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.

452. 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.

FOURTH COUNT – BY APPLE ONLY

Unfair Competition

(Cal. Bus. & Prof. Code § 17200)

(Claim Against Fortress, Fortress Credit, Uniloc USA, Uniloc Luxembourg, Uniloc 2017, INVT, Inventergy Only)

453. Apple repeats and realleges the allegations of the preceding and subsequent paragraphs as if fully set forth herein.

454. Fortress, Fortress Credit, Uniloc USA, Uniloc Luxembourg, Uniloc 2017, INVT, and Inventergy have engaged in unfair competition in violation of Cal. Bus. Prof. Code § 17200, et seq. As described below, their conduct violates Section 5 of the Federal Trade Commission Act, 15 U.S.C. § 45. That conduct is also unfair in that it violates the spirit and policy of the antitrust laws.

455. Fortress, Fortress Credit, Uniloc USA, Uniloc Luxembourg, Uniloc 2017, INVT, and Inventergy's unfair business practices include their efforts to evade FRAND commitments through the transfer of SEPs in the Input Technology Markets to INVT and Uniloc 2017, as described in paragraphs 410-422. The acquiring parties would then demand non-FRAND royalties in violation of those FRAND commitments.[103]

456. The United States Federal Trade Commission ("FTC") enforces Section 5 of the Federal Trade Commission Act, which is similar to Cal. Bus. & Prof. Code § 17200. Section 5 of the FTC Act is used as a model in interpreting Cal. Bus. & Prof. Code § 17200.

457. The FTC has brought an action under Section 5 where, like here, an acquiring firm refused to abide by licensing commitments that its predecessor made in connection with industry standard-setting activities.[104]

458. As a direct result of Fortress, Fortress Credit, Uniloc USA, Uniloc Luxembourg,

[103] Apple brings this Count only as to conduct relating to patents that INVT and Uniloc 2017 have not yet asserted against Apple.

[104] *See* Decision and Order, *In the Matter of Negotiated Data Solutions LLC*, File No. 051-0094 (Jan. 23, 2008), available at https://www.ftc.gov/sites/default/files/documents/cases/2008/01/080122do.pdf.

Uniloc 2017, INVT, and Inventergy's wrongful conduct, competition has been injured and, absent an injunction, will continue to be injured, in the Input Technology 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 for cellular devices that comply with relevant standards by raising costs for innovators to bring products to market via exorbitant, non-FRAND licensing terms. As a direct result of Fortress, Fortress Credit, Uniloc USA, Uniloc Luxembourg, Uniloc 2017, INVT, and Inventergy's illegal conduct, Apple has 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) 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;

d) 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;

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

f) 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: August 4, 2020

Respectfully submitted,

By: /s/ *Mark D. Selwyn*

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REDACTED VERSION OF DOCUMENT SOUGHT TO BE SEALED

CERTIFICATE OF SERVICE

On this 4th day of August 2020, I hereby certify that I caused the foregoing document entitled Amended Complaint to be filed via the court's CM/ECF system, which shall send notice to the counsel of record for the parties.

DATED: August 4, 2020

Respectfully submitted,

By: */s/ Mark D. Selwyn*

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