UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
MIDLAND/ODESSA DIVISION

INTELLECTUAL VENTURES I LLC and INTELLECTUAL VENTURES II LLC, *Plaintiffs,* v. SOUTHWEST AIRLINES CO., *Defendant.*	**Civil Action No. 7:24-cv-00277-ADA** PUBLIC VERSION [redacted] **JURY TRIAL DEMANDED**

SECOND AMENDED COMPLAINT FOR PATENT INFRINGEMENT

Plaintiffs Intellectual Ventures I LLC and Intellectual Ventures II LLC (collectively, "Intellectual Ventures," "IV," or "Plaintiffs"), in their Second Amended Complaint for patent infringement against Defendant Southwest Airlines Co. ("Southwest" or "Defendant"), hereby allege as follows:

NATURE OF THE ACTION

1. This is a civil action for the infringement of United States Patent No. 8,332,844 ("the '844 Patent"), United States Patent No. 8,407,722 ("the '722 Patent"), United States Patent No. 7,949,785 ("the '785 Patent"), United States Patent No. 8,027,326 ("the '326 Patent), United States Patent No. 7,324,469 ("the '469 Patent"), United States Patent No. 7,257,582 ("the '582 Patent"), United States Patent No. 7,712,080 ("the '080 Patent"), United States Patent No. 7,721,282 ("the '282 Patent"), United States Patent No. 7,822,841 ("the '841 Patent"), United States Patent No. 8,352,584 ("the '584 Patent"), and United States Patent No. 11,032,000 ("the '000 Patent") (collectively, the "Patents-in-Suit") under the Patent Laws of the United States, 35 U.S.C. § 1 *et seq*.

THE PARTIES

Intellectual Ventures

2. Plaintiff Intellectual Ventures I LLC ("Intellectual Ventures I") is a Delaware limited liability company having its principal place of business located at 14360 SE Eastgate Way, Bellevue, WA 98007.

3. Plaintiff Intellectual Ventures II LLC ("Intellectual Ventures II") is a Delaware limited liability company having its principal place of business located at 14360 SE Eastgate Way, Bellevue, WA 98007.

4. Intellectual Ventures I is the owner of all rights, title, and interest in and to the '722, '582, '326, and '785 Patents, and is the exclusive licensee of the '080 Patent.

5. Intellectual Ventures II is the owner of all rights, title, and interest in and to the '844, '282, '841, '584, '469, and '000 Patents.

Southwest Airlines

6. Upon information and belief, Defendant Southwest Airlines ("Southwest") is a Texas corporation with its principal place of business at 2702 Love Field Drive, Dallas, TX 75235. Southwest may be served with process through its registered agent, Corporation Service Company at 211 E. 7th Street Suite 620, Austin, TX 78701. Southwest is registered to do business in the State of Texas and has been since at least 1967. On information and belief, Southwest does business in the State of Texas and the Western District of Texas.

7. Upon information and belief, Southwest makes, utilizes, services, tests, distributes, sells, offers, and/or offers for sale in the State of Texas and the Western District of Texas products, services, and technologies ("Accused Products and Services") that infringe the Patents-in-Suit,

contributes to the infringement by others, and/or induces others to commit acts of patent infringement in the State of Texas and the Western District of Texas.

8. On information and belief, Southwest has derived substantial revenue from infringing acts in the Western District of Texas, including from the sale and use of the Accused Products and Services as described in more detail below.

JURISDICTION AND VENUE

9. This is an action for patent infringement arising under the patent laws of the United States. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

10. This Court has personal jurisdiction over Southwest because Southwest conducts business in and has committed acts of patent infringement, contributed to infringement by others, and/or induced others to commit acts of patent infringement in this District, the State of Texas, and elsewhere in the United States, and has established minimum contacts with this forum state such that the exercise of jurisdiction over Southwest would not offend the traditional notions of fair play and substantial justice. Upon information and belief, Southwest transacts substantial business with entities and individuals in the State of Texas and the Western District of Texas, by, among other things, utilizing, servicing, testing, distributing, selling, offering, and/or offering for sale the Accused Products and Services that infringe the Patents-in-Suit, as well as by providing service and support to its customers in this District. Southwest also places certain of the Accused Products and Services into the stream of commerce with the knowledge and expectation that they will be sold in the State of Texas, including this District. For example, Southwest provides Wi-Fi service for its customers and/or employees on Southwest airplanes within this District.

11. Southwest is subject to this Court's general and specific jurisdiction pursuant to due process and/or the Texas Long Arm Statute due at least to Southwest's substantial business in

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the State of Texas and this District, including maintaining a principal place of business at 2702 Love Field Drive, Dallas, TX 75235, through its past infringing activities, because Southwest regularly does and solicits business herein, and/or because Southwest has engaged in persistent conduct and/or has derived substantial revenues from goods and services provided to customers in the State of Texas and this District.

12. Upon information and belief, Southwest does business itself, or through its subsidiaries, affiliates, and agents, in the State of Texas and the Western District of Texas.

13. Upon information and belief, Southwest flies to 10 destinations[1] within Texas.

14. Venue is proper in this District pursuant to 28 U.S.C. §§ 1391(b)-(c) and 1400(b) because Southwest has both established places of business in this judicial district and has committed acts of infringement in this judicial district.

15. Upon information and belief, Southwest maintains regular and established places of business via terminals, airplanes, operations centers, and ticket counters, as well as other equipment and facilities, at airports located in this District. Southwest has regular and established places of business at which it has committed acts of infringement and placed the Accused Products and Services into the stream of commerce, throughout the State of Texas and the Western District of Texas. For example, Southwest operates flights at multiple airports throughout this District, including at least: (1) Midland International Air & Space Port (MAF) – located at 9506 La Force Blvd; (2) Austin-Bergstrom International Airport (AUS) – located at 3600 Presidential Blvd, Austin, TX 78719; (3) San-Antonio International Airport (SAT) – located at 9800 Airport Blvd, San Antonio TX 78216; (4) El Paso International Airport (ELP) – located at 6701 Convair Rd, El Paso, TX 79925 (collectively "Southwest Airport Locations").

[1] https://www.swabiz.com/route-map/?clk=RTMAPMAP (Last Accessed on 10/9/2024).

[redacted]

16. Upon information and belief, Southwest is one of only four airline carriers at the Midland International Air & Space Port[2].

17. Upon information and belief, Southwest has a 44%[3] share of all the seats at the Austin-Bergstrom International Airport.

18. Upon information and belief, Southwest holds its Southwest Airport Locations to be regular and established places of business of Southwest in this District by operating flights, selling tickets, and servicing customers at these locations.

19. Upon information and belief, the Southwest Airport Locations in this District are regular, continuous, and established physical places of business of Southwest, being established, ratified, and/or controlled by Southwest as authorized locations, which are places of business at which Southwest makes, utilizes, services, tests, distributes, offers and/or offers for sale the Accused Products and Services.

20. Upon information and belief, Southwest ratifies and holds its Southwest Airport Locations out as regular and established places of business of Southwest in this District by listing them on Southwest's website, including, *e.g.,* as shown below:[4]

[2] https://www.flymaf.com/147/Airlines (Last Accessed on 10/9/24).
[3] https://thepointsguy.com/news/delta-air-lines-austin-expansion-texas/ (Last Accessed on October 9, 2024)
[4] https://www.southwest.com/route-map/?clk=GSUBNAV-AIR-ROUTEMAP (Last Accessed on October 9, 2024).

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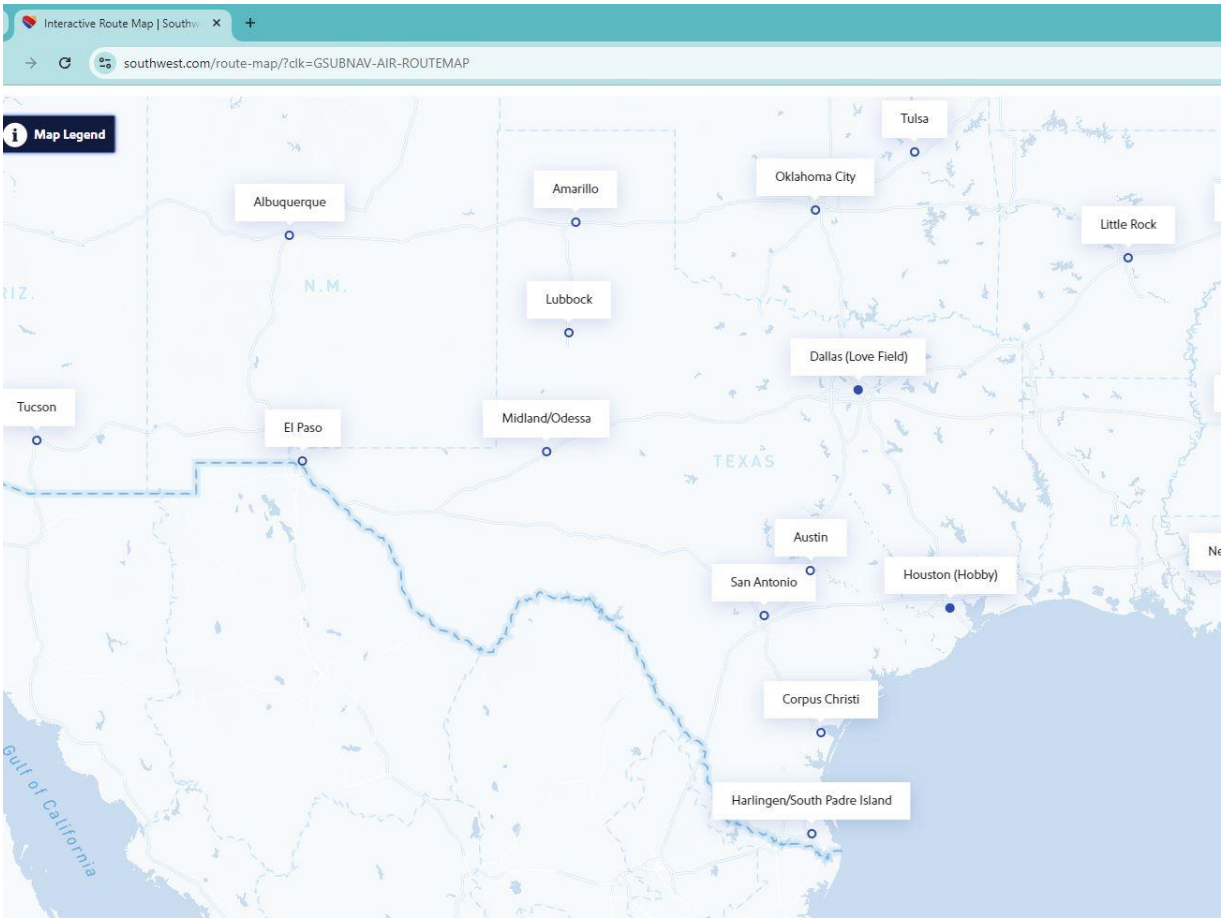
[redacted]



21. Upon information and belief, Southwest has established, ratified, and holds these Southwest Airport Locations out as regular and established places of business of Southwest by directing and controlling these Southwest Airport Location's actions and services in the foregoing manner, and has consented to these Southwest Airport Locations acting on Southwest's behalf and being Southwest's places of business whereby the Accused Products and Services are utilized, serviced, tested, distributed, offered and/or offered for sale and placed into the stream of commerce in this District, and these Southwest Airport Locations have consented to act on Southwest's behalf pursuant to the foregoing terms of control and direction in order to, among other things, be able to offer flight services that utilize the Accused Products and Services.

FACTUAL BACKGROUND

22. Intellectual Ventures Management, LLC ("Intellectual Ventures Management") was founded in 2000. Since then, Intellectual Ventures Management has been involved in the business of inventing. Intellectual Ventures Management facilitates invention by inventors and the filing of patent applications for those inventions, collaboration with others to develop and patent inventions, and the acquisition and licensing of patents from individual inventors, universities, corporations, and other institutions. A significant aspect of Intellectual Ventures Management's business is managing the Plaintiffs in this case, Intellectual Ventures I and Intellectual Ventures II.

23. One of the founders of Intellectual Ventures Management is Nathan Myhrvold, who worked at Microsoft from 1986 until 2000 in a variety of executive positions, culminating in his appointment as the company's first Chief Technology Officer ("CTO") in 1996. While at Microsoft, Dr. Myhrvold founded Microsoft Research in 1991 and was one of the world's foremost software experts. Between 1986 and 2000, Microsoft became the world's largest technology company.

24. Under Dr. Myhrvold's leadership, Intellectual Ventures acquired more than 70,000 patents covering many important inventions used in the airline and avionics industries.

25. Southwest offers various types of airline and avionics related services and technologies to its customers, partners, vendors, and/or third parties. Southwest's products and services utilize and/or support various technologies, including but not limited to Kubernetes, Kafka, Docker, Spark, Hadoop, In-Flight and Ground Connectivity, and Internet Hotspots. Certain of these products and services, such as In-Flight and Ground Connectivity and Internet Hotspots, are offered to Southwest's customers and/or employees and use WiFi and cellular technologies,

[redacted]

managed by Southwest, to enable Southwest products and services that it further offers to its customers and/or employees. Certain of these products and services, such as Kubernetes, Kafka, Docker, Spark, and Hadoop, are technologies used and managed by Southwest to enable the various products and services that Southwest offers to its customers. Southwest makes, utilizes, services, tests, distributes, offers, and/or offers for sale these products and services throughout the world, including in the United States and Texas.

THE PATENTS-IN-SUIT

U.S. Patent No. 8,332,844

26. On December 11, 2012, the PTO issued the '844 Patent, titled "Root Image Caching and Indexing for Block-Level Distributed Application Management." The '844 Patent is valid and enforceable. A copy of the '844 Patent is attached as Exhibit 1.

27. Intellectual Ventures II is the owner of all rights, title, and interest in and to the '844 Patent, and holds all substantial rights therein, including the right to grant licenses, to exclude others, and to enforce and recover past damages for infringement of the '844 Patent.

U.S. Patent No. 8,407,722

28. On March 26, 2013, the PTO issued the '722 Patent, titled "Asynchronous Messaging Using a Node Specialization Architecture in the Dynamic Routing Network." '722 Patent is valid and enforceable. A copy of the '722 Patent is attached as Exhibit 2.

29. Intellectual Ventures I is the owner of all rights, title, and interest in and to the '722 Patent, and holds all substantial rights therein, including the right to grant licenses, to exclude others, and to enforce and recover past damages for infringement of the '722 Patent.

U.S. Patent No. 7,949,785

30. On May 24, 2011, the PTO issued the '785 Patent, titled "Secure Virtual Community Network System." The '785 Patent is valid and enforceable. A copy of the '785 Patent is attached as Exhibit 3.

31. Intellectual Ventures I is the owner of all rights, title, and interest in and to the '785 Patent, and holds all substantial rights therein, including the right to grant licenses, to exclude others, and to enforce and recover past damages for infringement of the '785 Patent.

U.S. Patent No. 8,027,326

32. On September 27, 2011, the PTO issued the '326 Patent, titled "Method and System for High Data Rate Multi-Channel WLAN Architecture." The '326 Patent is valid and enforceable. A copy of the '326 Patent is attached as Exhibit 4.

33. Intellectual Ventures I is the owner of all rights, title, and interest in and to the '326 Patent, and holds all substantial rights therein, including the right to grant licenses, to exclude others, and to enforce and recover past damages for infringement of the '326 Patent.

U.S. Patent No. 7,324,469

34. On January 29, 2008, the PTO issued the '469 Patent titled "Satellite Distributed High Speed Internet Access." The '469 Patent is valid and enforceable. A copy of the '469 Patent is attached as Exhibit 5.

35. Intellectual Ventures II is the owner of all rights, title, and interest in and to the '469 Patent, and holds all substantial rights therein, including the right to grant licenses, to exclude others, and to enforce and recover past damages for infringement of the '469 Patent.

U.S. Patent No. 7,257,582

36. On August 14, 2007, the PTO issued the ’582 Patent titled “Load Balancing with Shared Data.” The ’582 Patent is valid and enforceable. A copy of the ’582 Patent is attached as Exhibit 6.

37. Intellectual Ventures I is the owner of all rights, title, and interest in and to the ’582 Patent, and holds all substantial rights therein, including the right to grant licenses, to exclude others, and to enforce and recover past damages for infringement of the ’582 Patent.

U.S. Patent No. 7,712,080

38. On May 4, 2010, the PTO issued the ’080 Patent, titled “Systems and Methods for Parallel Distributed Programming.” The ’080 Patent is valid and enforceable. A copy of the ’080 Patent is attached as Exhibit 15.

39. Intellectual Ventures I LLC is the exclusive licensee under the ’080 Patent, and holds all substantial rights therein, including the right to grant licenses, to exclude others, and to enforce and recover past damages for infringement of the ’080 Patent.

U.S. Patent No. 7,721,282

40. On May 18, 2010, the PTO issued the ’282 Patent, titled “Block-Level I/O Subsystem For Distributed Application Environment Management.” The ’282 Patent is valid and enforceable. A copy of the ’282 Patent is attached as Exhibit 19.

41. Intellectual Ventures II LLC is the owner of all rights, title, and interest in and to the ’282 Patent, and holds all substantial rights therein, including the right to grant licenses, to exclude others, and to enforce and recover past damages for infringement of the ’282 Patent.

U.S. Patent No. 7,822,841

42. On October 26, 2010, the PTO issued the '841 Patent, titled "Method and System for Hosting Multiple, Customized Computing Clusters." The '841 Patent is valid and enforceable. A copy of the '841 Patent is attached as Exhibit 16.

43. Intellectual Ventures II LLC is the owner of all rights, title, and interest in and to the '841 Patent, and holds all substantial rights therein, including the right to grant licenses, to exclude others, and to enforce and recover past damages for infringement of the '841 Patent.

U.S. Patent No. 8,352,584

44. On January 8, 2013, the PTO issued the '584 Patent, titled "Systems for Hosting Customized Computing Clusters." The '584 Patent is valid and enforceable. A copy of the '584 Patent is attached as Exhibit 17.

45. Intellectual Ventures II LLC is the owner of all rights, title, and interest in and to the '584 Patent, and holds all substantial rights therein, including the right to grant licenses, to exclude others, and to enforce and recover past damages for infringement of the '584 Patent.

U.S. Patent No. 11,032,000

46. On June 8, 2021, the PTO issued the '000 Patent, titled "Communications in a Wireless Network." The '000 Patent is valid and enforceable. A copy of the '000 Patent is attached as Exhibit 18.

47. Intellectual Ventures II LLC is the owner of all rights, title, and interest in and to the '000 Patent, and holds all substantial rights therein, including the right to grant licenses, to exclude others, and to enforce and recover past damages for infringement of the '000 Patent.

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COUNT I

(Southwest's Infringement of U.S. Patent No. 8,332,844)

48. Paragraphs 1 through 47 are incorporated by reference as if fully set forth herein.

49. **Direct Infringement.** Southwest, without authorization or license from IV, has directly infringed, and continues to directly infringe, literally and/or by the doctrine of equivalents, individually and/or jointly, the '844 Patent, by making, utilizing, servicing, testing, distributing, selling offering, and/or offering for sale the Accused Products and Services that infringe the '844 Patent, including but not limited to at least the Accused Products and Services identified in the example chart incorporated, per paragraph 50 below, into this Count (collectively, "Example Southwest Count I Products and Services") that infringe at least the example claims of the '844 Patent identified in the chart incorporated into this Count (the "Example '844 Patent Claims") literally or by the doctrine of equivalents.

50. On information and belief, Southwest has also infringed and continues to directly infringe literally or under the doctrine of equivalents, the Example '844 Patent Claims, by internal testing and use of the Example Southwest Count I Products and Services.

51. Each claim of the '844 Patent is valid, enforceable, and patent eligible under Section 101 of the Patent Act. For example, the '844 Patent is related to root image caching and indexing for block-level distributed application management. The '844 Patent discloses and claim systems and methods that address technical problems that are inherent in and derive from prior art methods and systems involving the problems of updating the boot image(s) for the cluster, among other issues. For example, the '844 Patent describes at column 1 lines 64-67 that "[r]egardless of which of the preceding methods is used, both suffer from the same major problem-updating the boot image(s) for the cluster is cumbersome, as it means updating a number of copies of the boot

image." The '844 Patent addressed this technical problem and others with a technical solution that is reflected in the asserted claims, including for example claim 7. Additionally, the claims of the '844 Patent are novel and non-obvious and recite elements and steps that were not routine or conventional at the time of the invention, either individually or in combination. For example, the following claim limitations recited in claim 7 were not routine or conventional, as evidenced by the '844 Patent file history: "said leaf images including only additional data blocks not previously contained in said root image and changes made by respective compute nodes to the blocks of the root image" and "wherein said leaf images of respective compute nodes do not include blocks of said root image that are unchanged by respective compute nodes."

52. Each claim of the '844 Patent recites an independent invention. Neither the example claims described nor any other individual claim is representative of all claims in the '844 Patent.

53. Southwest has known that its infringing products and services, such as the Example Count I Products and Services, cannot be used without infringing the technology claimed in the '844 Patent, and are not staple articles of commerce suitable for substantial non-infringing uses.

54. **Willful Blindness.** Southwest knew of the '844 Patent, or should have known of the '844 Patent, but was willfully blind to its existence. Southwest has had actual knowledge of the '844 Patent not later than receipt of a letter, dated September 30, 2024, and received on the same date. By the time of trial, Southwest will have known (since receiving such notice) that its continued actions would infringe and actively induce and contribute to the infringement of one or more claims of the '844 Patent. *See* Exhibit 7 (Notice Letter).

55. **Induced Infringement.** Southwest has also contributed to and/or induced, and continues to contribute to and/or induce the infringement of the '844 Patent by contributing to

and/or inducing its partners, vendors, customers, and/or third parties to use or cause to use its products and services, such as Example Southwest Count I Products and Services, in an infringing manner as described above, including encouraging and instructing its partners, vendors, customers, and/or third parties to infringe the '844 Patent. For example, on information and belief, Southwest offers products and services to its customers and third parties and/or employees that are associated with backend functionality provided by the Example Southwest Count I Products and Services. Southwest has contributed to and/or induced, and continues to contribute to and/or induce the infringement of the '844 Patent by offering such products and services and contributing to and/or inducing its customers and third parties and/or employees to use such products and services that are associated with backend functionality provided by the Example Southwest Count I Products and Services.

56. Southwest therefore actively, knowingly, and intentionally has committed, and continues to commit, affirmative acts that cause infringement, literally and/or by the doctrine of equivalents, of one or more claims of the '844 Patent with knowledge of the '844 Patent and knowledge that the induced acts constitute infringement of one or more claims of the '844 Patent. Southwest has actively induced others, including, but not limited to, partners, vendors, customers, and/or third parties who use the Example Southwest Count I Products and Services to infringe the '844 Patent, literally and/or by the doctrine of equivalents, throughout the United States, including within this District, by, among other things, advertising, promoting, and instructing the infringing use of the Example Southwest Count I Products and Services.

57. **Contributory Infringement.** Southwest actively, knowingly, and intentionally has committed, and continues to commit contributory infringement, literally and/or by the doctrine of equivalents, by, *inter alia,* knowingly providing software and technologies that when used,

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cause the direct infringement of one or more claims of the ’844 Patent by its customers, partners, vendors, and/or third parties, and which have no substantial non-infringing uses, or include a separate and distinct technology that is especially made or especially adapted for use in infringement of the ’844 Patent, and is not a staple article or commodity of commerce suitable for substantial non-infringing use.

58. Southwest therefore actively, knowingly, and intentionally has been and continues to materially contribute to their partners’, vendors’, and/or third parties’ infringement of the ’844 Patent, literally and/or by the doctrine of equivalents, by making, utilizing, servicing, testing, distributing, offering, and/or offering for sale the Example Southwest Count I Products and Services for use in a manner that infringes one or more claims of the ’844 Patent. Example Southwest Count I Products and Services are especially made or adapted for infringing the ’844 Patent and have no substantial non-infringing use.

59. Exhibit 8 (claim chart) includes the Example Southwest Count I Products and Services and Example ’844 Patent Claims. As set forth in the chart, the Example Southwest Count I Products and Services practice the technology claimed by the ’844 Patent. Accordingly, the Example Southwest Count I Products and Services incorporated in the chart satisfies all elements of the Example ’844 Patent Claims.

60. Intellectual Ventures therefore incorporates by reference in its allegations herein the claim chart of Exhibit 8.

61. Intellectual Ventures is entitled to recover damages adequate to compensate for Defendant’s infringement of the ’844 Patent and will continue to be damaged by such infringement. Intellectual Ventures is entitled to recover damages from Defendant to compensate them for Defendant’s infringement, as alleged above, in an amount measured by no less than a

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reasonable royalty under 35 U.S.C. § 284, as well as enhanced damages pursuant to 35 U.S.C. § 284.

62. Further, Defendant's infringement of Intellectual Ventures' rights under the '844 Patent will continue to damage Intellectual Ventures' business, causing irreparable harm for which there is no adequate remedy at law, unless enjoined by the Court.

63. As a result of Defendant's acts of infringement, Plaintiffs have suffered and will continue to suffer damages in an amount to be proven at trial.

COUNT II

(Southwest's Infringement of U.S. Patent No. 8,407,722)

64. Paragraphs 1 through 63 are incorporated by reference as if fully set forth herein.

65. **Direct Infringement.** Southwest, without authorization or license from IV, has directly infringed, and continues to directly infringe, literally and/or by the doctrine of equivalents, individually and/or jointly, the '722 Patent, by making, utilizing, servicing, testing, distributing, and/or offering the Accused Products and Services that infringe the '722 Patent, including but not limited to at least the Accused Products and Services identified in the example chart incorporated, per paragraph 66 below, into this Count (collectively, "Example Southwest Count II Products and Services") that infringed at least the example claims of the '722 Patent identified in the chart incorporated into this Count (the "Example '722 Patent Claims") literally or by the doctrine of equivalents.

66. On information and belief, Southwest has also infringed and continues to directly infringe, literally or under the doctrine of equivalents, the Example '722 Patent Claims, by internal testing and use of the Example Southwest Count II Products and Services.

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67. Each claim of the ’722 Patent is valid, enforceable, and patent eligible under Section 101 of the Patent Act. For example, the ’722 Patent is related to a dynamic content routing network that routes update messages including updates to properties of live objects to clients. The ’722 Patent discloses and claims systems and methods that address technical problems that are inherent in and derive from prior art methods and systems involving the problems of dynamically updating content at a client device, among other issues. For example, the ’722 Patent describes at column 2 lines 17 to 35 “substantial limitations” with “dynamically updating content in a web page at a client device,” including a lack of “efficient updating of data at the client devices.”’ The ’722 Patent also describes prior “simple web programming techniques” for attempting to update content on a client device at column 2 line 36 to column 3 line 3, but these approaches suffer from an “unalterable trade off in a client-driven approach.” The ’722 Patent further describes that there is a need for “an efficient way to provide dynamic content to a web page at a client device” at column 3 lines 4-5. The ’722 Patent addresses this technical problem and others with a technical solution that is described in the specification and captured by the asserted claims, including claim 14. Additionally, the claims of the ’722 Patent are novel and non-obvious and recite elements and steps that were not routine or conventional at the time of the invention, either individually or in combination. For example, the following claim limitations recited in claim 14 were not routine or conventional, as evidenced by the ’722 Patent file history: “providing, using a processing device of an input source, a data representation to a client device, different from the input source, coupled to a routing network, wherein the data representation includes at least one live object recognizable by the client device, and causing the client device to respond to the live object of the data representation by determining an object identifier (ID) of the live object and to register for updates of the live object with the routing network …”; “sending, using the processing device of the input

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source, an update message to the routing network, wherein the update message identifies the live object and contains update data that updates a property of the live object"; and "wherein a gateway device at the routing network is configured to identify a category of the update message based on the input source, to determine a node type to which the identified category maps, and to route the update message to the node, having the node type, at the routing network."

68. Each claim of the '722 Patent recites an independent invention. Neither the example claims described nor any other individual claim is representative of all claims in the '722 Patent.

69. Southwest has known that its infringing products and services, such as the Example Southwest Count II Products and Services, cannot be used without infringing the technology claimed in the '722 Patent, and are not staple articles of commerce suitable for substantial non-infringing uses.

70. **Willful Blindness.** Southwest knew of the '722 Patent, or should have known of the '722 Patent, but was willfully blind to its existence. Southwest has had actual knowledge of the '722 Patent not later than receipt of a letter, dated September 30, 2024, and received on the same date. By the time of trial, Southwest will have known and intended (since receiving such notice) that its continued actions would infringe and actively induce and contribute to the infringement of one or more claims of the '722 Patent. *See* Exhibit 7 (Notice Letter).

71. **Induced Infringement**. Southwest has also contributed to and/or induced, and continues to contribute to and/or induce the infringement of the '722 Patent by contributing to and/or inducing its partners, vendors, customers, and/or third parties to use or cause to use its products and services, such as Example Southwest Count II Products and Services, in an infringing manner as described above, including encouraging and instructing its partners, vendors, customers,

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and/or third parties to infringe the ’722 Patent. For example, on information and belief, Southwest offers products and services to its customers and third parties and/or employees that are associated with backend functionality provided by the Example Southwest Count II Products and Services. Southwest has contributed to and/or induced, and continues to contribute to and/or induce the infringement of the ’722 Patent by offering such products and services and contributing to and/or inducing its customers and third parties and/or employees to use such products and services that are associated with backend functionality provided by the Example Southwest Count II Products and Services.

72. Southwest therefore actively, knowingly, and intentionally has committed, and continues to commit, affirmative acts that cause infringement, literally and/or by the doctrine of equivalents, of one or more claims of the ’722 Patent with knowledge of the ’722 Patent and knowledge that the induced acts constitute infringement of one or more claims of the ’722 Patent. Southwest has actively induced others, including, but not limited to, partners, vendors, customers, and/or third parties who use the Example Southwest Count II Products and Services to infringe the ’722 Patent, literally and/or by the doctrine of equivalents, throughout the United States, including within this District, by, among other things, advertising, promoting, and instructing the infringing use of the Example Southwest Count II Products and Services.

73. **Contributory Infringement.** Southwest actively, knowingly, and intentionally has committed, and continues to commit contributory infringement, literally and/or by the doctrine of equivalents, by, *inter alia,* knowingly providing software and technologies that when used, cause the direct infringement of one or more claims of the ’722 Patent by its partners, vendors, customers, and/or third parties, and which have no substantial non-infringing uses, or include a separate and distinct technology that is especially made or especially adapted for use in

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infringement of the ’722 Patent, and is not a staple article or commodity of commerce suitable for substantial non-infringing use.

74. Southwest therefore actively, knowingly, and intentionally has been and continues to materially contribute to their partners’, vendors’, and/or third-parties’ infringement of the ’722 Patent, literally and/or by the doctrine of equivalents, by making, utilizing, servicing, testing, distributing, offering, and/or offering for sale the Example Southwest Count II Products and Services for use in a manner that infringes one or more claims of the ’722 Patent. Example Southwest Count II Products and Services are especially made or adapted for infringing the ’722 Patent and have no substantial non- infringing use.

75. Exhibit 9 (claim chart) includes the Example Southwest Count II Products and Services and Example ’722 Patent Claims. As set forth in the chart, the Example Southwest Count II Products and Services practice the technology claimed by the ’722 Patent. Accordingly, the Example Southwest Count II Products and Services incorporated in the chart satisfies all elements of the Example ’722 Patent Claims.

76. Intellectual Ventures therefore incorporates by reference in its allegations herein the claim chart of Exhibit 9.

77. Intellectual Ventures is entitled to recover damages adequate to compensate for Defendant’s infringement of the ’722 Patent and will continue to be damaged by such infringement. Intellectual Ventures is entitled to recover damages from Defendant to compensate them for Defendant’s infringement, as alleged above, in an amount measured by no less than a reasonable royalty under 35 U.S.C. § 284, as well as enhanced damages pursuant to 35 U.S.C. § 284.

78. Further, Southwest's infringement of Intellectual Ventures' rights under the '722 Patent will continue to damage Intellectual Ventures' business, causing irreparable harm for which there is no adequate remedy at law, unless enjoined by the Court.

79. As a result of Southwest's acts of infringement, Intellectual Ventures has suffered and will continue to suffer damages in an amount to be proven at trial.

COUNT III

(Southwest's Infringement of U.S. Patent No. 7,949,785)

80. Paragraphs 1 through 79 are incorporated by reference as if fully set forth herein.

81. **Direct Infringement**. Southwest, without authorization or license from IV, has directly infringed, and continues to directly infringe, literally and/or by the doctrine of equivalents, individually and/or jointly, the '785 Patent, by making, utilizing, servicing, testing, distributing, offering, and/or offering for sale the Accused Products and Services that infringe the '785 Patent, including but not limited to at least the Accused Products and Services identified in the example chart incorporated, per paragraph 82 below, into this Count (collectively, "Example Southwest Count III Products and Services") that infringe at least the example claims of the '785 Patent identified in the chart incorporated into this Count (the "Example '785 Patent Claims") literally or by the doctrine of equivalents.

82. On information and belief, Southwest has also infringed and continues to directly infringe, literally or under the doctrine of equivalents, the Example '785 Patent Claims, by internal testing and use of the Example Southwest Count III Products and Services.

83. Each claim of the '785 Patent is valid, enforceable, and patent eligible under Section 101 of the Patent Act. For example, the '785 Patent is related to private virtual dynamic networks and enabling communications between devices on public and private networks. The

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’785 Patent discloses and claims systems and methods that address technical problems that are inherent in and derive from prior art methods and systems involving the problems of virtual network management, among other issues. For example, the ’785 Patent at column 1 line 56 to column 2 line 25 describes the development of “Network Address Translation (NAT)” for handling private and public addressing in networks, and the problem with NAT implementations is that they “only work[ ] for communication initiated by a host within the private network to a host on the Internet that has a public IP address.” The development of mobile devices exacerbates issues with network communications, as there are “no means for allowing the host outside of the private network to initiate communications with the mobile computing device” when the mobile device moves between networks and “the host outside the private network does not know the address for the mobile computing device or the network that the mobile computing device is currently connected to,” as described at column 2 lines 33-44 of the ’785 Patent specification. The ’785 Patent further describes that there is a “need for a system that provides for local and remote entities to communicate and collaborate using the Internet, can work with existing NAT devices and firewalls, and allows for devices to move to different physical networks” at column 2 lines 45 to 48. The ’785 Patent addressed this technical problem and others with a technical solution that is described in the specification and captured by one or more claims. Additionally, the claims of the ’785 Patent are novel and non-obvious and recite elements and steps that were not routine or conventional at the time of the invention, either individually or in combination. For example, the following claim limitations recited in claim 30 were not routine or conventional, as evidenced by the ’785 Patent file history: “a memory and a processor to implement a register module configured to register devices in a virtual network, the register module further configured to … distribute a virtual network address to the device when the device is registered in the virtual network, the

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device being identified to other devices in the virtual network by the virtual network address"; and "a DNS server for the virtual network, the DNS server configured to receive a DNS request from a first device in the virtual network, and return a network address associated with a network route director, a private network address associated with a second device in the virtual network, and a virtual network address associated with the second device."

84. Each claim of the '785 Patent recites an independent invention. Neither the example claims described nor any other individual claim is representative of all claims in the '785 Patent.

85. Southwest has known that its infringing products and services, such as the Example Southwest Count III Products and Services, cannot be used without infringing the technology claimed in the '785 Patent, and are not staple articles of commerce suitable for substantial non-infringing uses.

86. **Willful Blindness.** Southwest knew of the '785 Patent, or should have known of the '785 Patent, but was willfully blind to its existence. Southwest has had actual knowledge of the '785 Patent not later than receipt of a letter, dated September 30, 2024, and received on the same date. By the time of trial, Southwest will have known and intended (since receiving such notice) that its continued actions would infringe and actively induce and contribute to the infringement of one or more claims of the '785 Patent. *See* Exhibit 7 (Notice Letter).

87. **Induced Infringement.** Southwest has also contributed to and/or induced, and continues to contribute to and/or induce the infringement of the '785 Patent by contributing to and/or inducing its partners, vendors, customers, and/or third parties to use or cause to use its products and services, such as Example Southwest Count III Products and Services, in an infringing manner as described above, including encouraging and instructing its partners, vendors,

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customers, and/or third parties to infringe the ’785 Patent. For example, on information and belief, Southwest offers products and services to its customers and third parties and/or employees that are associated with backend functionality provided by the Example Southwest Count III Products and Services. Southwest has contributed to and/or induced, and continues to contribute to and/or induce the infringement of the ’785 Patent by offering such products and services and contributing to and/or inducing its customers and third parties and/or employees to use such products and services that are associated with backend functionality provided by the Example Southwest Count III Products and Services.

88. Southwest therefore actively, knowingly, and intentionally has committed, and continues to commit, affirmative acts that cause infringement, literally and/or by the doctrine of equivalents, of one or more claims of the ’785 Patent with knowledge of the ’785 Patent and knowledge that the induced acts constitute infringement of one or more claims of the ’785 Patent. Southwest has actively induced others, including, but not limited to, partners, vendors, customers, and/or third parties who use the Example Southwest Count III Products and Services to infringe the ’785 Patent, literally and/or by the doctrine of equivalents, throughout the United States, including within this District, by, among other things, advertising, promoting, and instructing the infringing use of the Example Southwest Count III Products and Services.

89. **Contributory Infringement.** Southwest actively, knowingly, and intentionally has committed, and continues to commit contributory infringement, literally and/or by the doctrine of equivalents, by, *inter alia*, knowingly providing software and technologies that when used, cause the direct infringement of one or more claims of the ’785 Patent by its partners, vendors, customers, and/or third parties, and which have no substantial non-infringing uses, or include a separate and distinct technology that is especially made or especially adapted for use in

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infringement of the ’785 Patent, and is not a staple article or commodity of commerce suitable for substantial non-infringing use.

90. Southwest therefore actively, knowingly, and intentionally has been and continues to materially contribute to their partners’, vendors’, and/or third-parties’ infringement of the ’785 Patent, literally and/or by the doctrine of equivalents, by making, utilizing, servicing, testing, distributing, offering, and/or offering for sale the Example Southwest Count III Products and Services for use in a manner that infringes one or more claims of the ’785 Patent. Example Southwest Count III Products and Services are especially made or adapted for infringing the ’785 Patent and have no substantial non-infringing use.

91. Exhibit 10 (claim chart) includes the Example Southwest Count III Products and Services and Example ’785 Patent Claims. As set forth in the chart, the Example Southwest Count III Products and Services practice the technology claimed by the ’785 Patent. Accordingly, the Example Southwest Count III Products and Services incorporated in the chart satisfies all elements of the Example ’785 Patent Claims.

92. Intellectual Ventures therefore incorporates by reference in its allegations herein the claim chart of Exhibit 10.

93. Intellectual Ventures is entitled to recover damages adequate to compensate for Defendant’s infringement of the ’785 Patent and will continue to be damaged by such infringement. Intellectual Ventures is entitled to recover damages from Defendant to compensate them for Defendant’s infringement, as alleged above, in an amount measured by no less than a reasonable royalty under 35 U.S.C. § 284, as well as enhanced damages pursuant to 35 U.S.C. § 284.

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94. Further, Southwest's infringement of Intellectual Ventures' rights under the '785 Patent will continue to damage Intellectual Ventures' business, causing irreparable harm for which there is no adequate remedy at law, unless enjoined by the Court.

95. As a result of Defendant's acts of infringement, Plaintiffs have suffered and will continue to suffer damages in an amount to be proven at trial.

COUNT IV

(Southwest's Infringement of U.S. Patent No. 8,027,326)

96. Paragraphs 1 through 95 are incorporated by reference as if fully set forth herein.

97. **Direct Infringement**. Southwest, without authorization or license from IV, has directly infringed, and continues to directly infringe, literally and/or by the doctrine of equivalents, individually and/or jointly, the '326 Patent, by making, utilizing, servicing, testing, distributing, offering, and/or offering for sale the Accused Products and Services that infringe the '326 Patent, including but not limited to at least the Accused Products and Services identified in the example chart incorporated, per paragraph 98 below, into this Count (collectively, "Example Southwest Count IV Products and Services") that infringe at least the example claims of the '326 Patent identified in the chart incorporated into this Count (the "Example '326 Patent Claims") literally or by the doctrine of equivalents.

98. On information and belief, Southwest has also infringed and continues to directly infringe, literally or under the doctrine of equivalents, the Example '326 Patent Claims, by internal testing and use of the Example Southwest Count IV Products and Services.

99. Each claim of the '326 Patent is valid, enforceable, and patent eligible under Section 101 of the Patent Act. For example, the '326 Patent is related to increasing Wi-Fi bandwidth using a dual-channel form for increased flexibility and performance. The '326 Patent

[redacted]

discloses and claims systems and methods that address technical problems that are inherent in and derive from prior art methods and systems involving the problems of increasing Wi-Fi traffic demand and corresponding need to increase bandwidth, among other issues. For example, the ’326 Patent describes at column 1 lines 65 to column 2 line 1 that radios compliant with IEEE 802.11a or 802.11g use “Orthogonal Frequency Division Multiplexing (OFDM) modulation in which a stream of data is transmitted over multiple small frequency sub-channels.” Based on the requirement of backward compatibility in IEEE 802.11 (WiFi), this includes all subsequent versions, meaning this OFDM mode is required to be supported in all WiFi hardware today. The patent further describes that “[l]egacy radios” were designed with several assumptions, including relatively stable channels, frames were “bursty in nature and relatively short,” and “initial channel estimate information determined at the start of each frame was assumed to be sufficiently accurate for that frame” at column 3 lines 41-47. The patent describes that, with an emphasis on “mobility and/or accuracy,” there is a greater need for “improved accuracy [that] can improve transmission speed and enable a higher transmission rate with a lower packet error rate (PER)” at column 3 lines 47-55. The ’326 Patent addressed this technical problem and others with a technical solution that is described in the specification, for example at column 3 lines 59 to 67, and captured by for example claim 1. Additionally, the claims of the ’326 Patent are novel and non-obvious and recite elements and steps that were not routine or conventional at the time of the invention, either individually or in combination. For example, the following claim limitations recited in claim 1 were not routine or conventional, as evidenced by the ’326 Patent file history: “partially filling the frequency gap between the first channel and the second channel by adding one or more data subcarriers into the frequency gap such that the one or more guard bands are at least partially filled

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with at least some of the one or more data subcarriers using full spectral synthesis capability of a fast fourier transform or an inverse fast fourier transform."

100. Each claim of the '326 Patent recites an independent invention. Neither the example claims described nor any other individual claim is representative of all claims in the '326 Patent.

101. Southwest has known that its infringing products and services, such as the Example Southwest Count IV Products and Services, cannot be used without infringing the technology claimed in the '326 Patent, and are not staple articles of commerce suitable for substantial non-infringing uses.

102. **Willful Blindness.** Southwest knew of the '326 Patent, or should have known of the '326 Patent, but was willfully blind to its existence. Southwest has had actual knowledge of the '326 Patent not later than receipt of a letter, dated September 30, 2024, and received on the same date. By the time of trial, Southwest will have known and intended (since receiving such notice) that its continued actions would infringe and actively induce and contribute to the infringement of one or more claims of the '326 Patent. *See* Exhibit 7 (Notice Letter).

103. **Induced Infringement.** Southwest has also contributed to and/or induced, and continues to contribute to and/or induce the infringement of the '326 Patent by contributing to and/or inducing its partners, vendors, customers, and/or third parties to use or cause to use its products and services, such as Example Southwest Count IV Products and Services, in an infringing manner as described above, including encouraging and instructing its customers, partners, vendors, customers, and/or third parties to infringe the '326 Patent. For example, on information and belief, Southwest offers Wi-Fi service through one or more providers such as

Viasat and Anuvu,[5] and Southwest uses hardware and/or software from these providers that support Wi-Fi, including IEEE 802.11n and 802.11ac protocols.[6]

104. Southwest therefore actively, knowingly, and intentionally has committed, and continues to commit, affirmative acts that cause infringement, literally and/or by the doctrine of equivalents, of one or more claims of the ’326 Patent with knowledge of the ’326 Patent and knowledge that the induced acts constitute infringement of one or more claims of the ’326 Patent. Southwest has actively induced others, including, but not limited to, customers, partners, vendors, customers, and/or third parties who use the Example Southwest Count IV Products and Services to infringe the ’326 Patent, literally and/or by the doctrine of equivalents, throughout the United States, including within this District, by, among other things, advertising, promoting, and instructing the infringing use of the Example Southwest Count IV Products and Services.

105. **Contributory Infringement.** Southwest actively, knowingly, and intentionally has committed, and continues to commit contributory infringement, literally and/or by the doctrine of equivalents, by, *inter alia*, knowingly providing software and technologies that when used, cause the direct infringement of one or more claims of the ’326 Patent by its partners, vendors, customers, and/or third parties, and which have no substantial non-infringing uses, or include a separate and distinct technology that is especially made or especially adapted for use in infringement of the ’326 Patent, and is not a staple article or commodity of commerce suitable for substantial non-infringing use.

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[5] https://www.swamedia.com/southwest-stories/wifi-modernization-first-viasat-aircraft-enters-service-MC5XTXWTTLWNESJDQR4LZQBIDI2I (Last Accessed on 10/11/2024).
[6] https://www.viasat.com/content/dam/us-site/aviation/documents/Viasat_Select_Router-datasheet.pdf; https://fcc.report/FCC-ID/U6YRDAA8190/5344017.pdf. (Last Accessed on 10/9/2024).

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106. Southwest therefore actively, knowingly, and intentionally has been and continues to materially contribute to their customers, partners', vendors', and/or third-parties' infringement of the '326 Patent, literally and/or by the doctrine of equivalents, by making, utilizing, servicing, testing, distributing, offering, and/or offering for sale the Example Southwest Count IV Products and Services for use in a manner that infringes one or more claims of the '326 Patent. Example Southwest Count IV Products and Services are especially made or adapted for infringing the '326 Patent and have no substantial non-infringing use.

107. Exhibit 11 (claim chart) includes the Example Southwest Count IV Products and Services and Example '326 Patent Claims. As set forth in the chart, the Example Southwest Count IV Products and Services practice the technology claimed by the '326 Patent. Accordingly, the Example Southwest Count IV Products and Services incorporated in the chart satisfies all elements of the Example '326 Patent Claims.

108. Intellectual Ventures therefore incorporates by reference in its allegations herein the claim chart of Exhibit 11.

109. Intellectual Ventures is entitled to recover damages adequate to compensate for Defendant's infringement of the '326 Patent and will continue to be damaged by such infringement. Intellectual Ventures is entitled to recover damages from Defendant to compensate them for Defendant's infringement, as alleged above, in an amount measured by no less than a reasonable royalty under 35 U.S.C. § 284, as well as enhanced damages pursuant to 35 U.S.C. § 284.

110. Further, Southwest's infringement of Intellectual Ventures' rights under the '326 Patent will continue to damage Intellectual Ventures' business, causing irreparable harm for which there is no adequate remedy at law, unless enjoined by the Court.

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111. As a result of Defendant's acts of infringement, Plaintiffs have suffered and will continue to suffer damages in an amount to be proven at trial.

COUNT V

(Southwest's Infringement of U.S. Patent No. 7,324,469)

112. Paragraphs 1 through 111 are incorporated by reference as if fully set forth herein.

113. **Direct Infringement**. Southwest, without authorization or license from IV, has directly infringed, and continues to directly infringe, literally and/or by the doctrine of equivalents, individually and/or jointly, the '469 Patent, by making, utilizing, servicing, testing, distributing, offering, and/or offering for sale the Accused Products and Services that infringe the '469 Patent, including but not limited to at least the Accused Products and Services identified in the example chart incorporated, per paragraph 114 below, into this Count (collectively, "Example Southwest Count V Products and Services") that infringe at least the example claims of the '469 Patent identified in the chart incorporated into this Count (the "Example '469 Patent Claims") literally or by the doctrine of equivalents.

114. On information and belief, Southwest has also infringed and continues to directly infringe, literally or under the doctrine of equivalents, the Example '469 Patent Claims, by internal testing and use of the Example Southwest Count V Products and Services.

115. Each claim of the '469 Patent is valid, enforceable, and patent eligible under Section 101 of the Patent Act. For example, the '469 Patent is related to an improved satellite distributed high-speed Internet Hotspot. The '469 Patent discloses and claims systems and methods that address technical problems that are inherent in and derive from prior art methods and systems involving the problems of distributed Internet Hotspots and providing Internet access to users who are in transient, among other issues. For example, the '469 Patent describes at column

1 lines 14-30 that the development of "high speed wireless Internet connections" has "greatly increased the volume and efficiency of work, both commercial and personal," but that individuals in transit, "such as salesmen, executives, truckers, and private individuals [have] virtually no access while traveling, especially in rural areas," and obtaining Internet access in such environments is "time consuming, costly and severely limits the benefits of the Internet." The '469 Patent addressed this technical problem and others with a technical solution that is described in the specification and captured by the asserted claims including claim 24. Additionally, the claims of the '469 Patent are novel and non-obvious and recite elements and steps that were not routine or conventional at the time of the invention, either individually or in combination. For example, the following claim limitations recited in claim 24 were not routine or conventional, as evidenced by the '469 Patent file history: "a subscriber access unit operatively coupled between the satellite dish and the at least one router, the subscriber access unit being capable of authenticating a subscription account associated with a user prior to allowing the user access to the Internet"; "wherein the satellite dish, at least one router and the subscriber access unit are located in a remote location a experiencing a relatively high volume of transient traffic"; and "wherein the user may authenticate the subscription account and access the Internet at the remote location by establishing a data connection between the web-ready device and the router."

116. Each claim of the '469 Patent recites an independent invention. Neither the example claims described nor any other individual claim is representative of all claims in the '469 Patent.

117. Southwest has known that its infringing products and services, such as the Example Southwest Count V Products and Services, cannot be used without infringing the technology

claimed in the ’469 Patent, and are not staple articles of commerce suitable for substantial non-infringing uses.

118. **Willful Blindness.** Southwest knew of the ’469 Patent, or should have known of the ’469 Patent, but was willfully blind to its existence. Southwest has had actual knowledge of the ’469 Patent not later than receipt of a letter, dated September 30, 2024, and received on the same date. By the time of trial, Southwest will have known and intended (since receiving such notice) that its continued actions would infringe and actively induce and contribute to the infringement of one or more claims of the ’469 Patent. *See* Exhibit 7 (Notice Letter).

119. **Induced Infringement.** Southwest has also contributed to and/or induced, and continues to contribute to and/or induce the infringement of the ’469 Patent by contributing to and/or inducing its partners, vendors, customers, and/or third parties to use or cause to use its products and services, such as Example Southwest Count V Products and Services, in an infringing manner as described above, including encouraging and instructing its customers, partners, vendors, customers, and/or third parties to infringe the ’469 Patent. For example, on information and belief, Southwest offers Wi-Fi service, including satellite-based Wi-Fi, through one or more providers such as Viasat and Anuvu,[7] and Southwest uses hardware and/or software from these providers that support Internet Hotspots using Wi-Fi.[8]

120. Southwest therefore actively, knowingly, and intentionally has committed, and continues to commit, affirmative acts that cause infringement, literally and/or by the doctrine of equivalents, of one or more claims of the ’469 Patent with knowledge of the ’469 Patent and

[7] https://www.swamedia.com/southwest-stories/wifi-modernization-first-viasat-aircraft-enters-service-MC5XTXWTTLWNESJDQR4LZQBIDI2I (Last Accessed on 10/11/2024).
[8] https://www.viasat.com/content/dam/us-site/aviation/documents/Viasat_Select_Router-datasheet.pdf. (Last Accessed on 10/9/2024); https://fcc.report/FCC-ID/U6YRDAA8190/5344017.pdf. (Last Accessed on 10/9/2024).

knowledge that the induced acts constitute infringement of one or more claims of the ’469 Patent. Southwest has actively induced others, including, but not limited to, partners, vendors, customers, and/or third parties who use the Example Southwest Count V Products and Services to infringe the ’469 Patent, literally and/or by the doctrine of equivalents, throughout the United States, including within this District, by, among other things, advertising, promoting, and instructing the infringing use of the Example Southwest Count V Products and Services.

121. **Contributory Infringement.** Southwest actively, knowingly, and intentionally has committed, and continues to commit contributory infringement, literally and/or by the doctrine of equivalents, by, *inter alia*, knowingly providing software and technologies that when used, cause the direct infringement of one or more claims of the ’469 Patent by its partners, vendors, customers, and/or third parties, and which have no substantial non-infringing uses, or include a separate and distinct technology that is especially made or especially adapted for use in infringement of the ’469 Patent, and is not a staple article or commodity of commerce suitable for substantial non-infringing use.

122. Southwest therefore actively, knowingly, and intentionally has been and continues to materially contribute to their customers, partners’, vendors’, and/or third-parties’ infringement of the ’469 Patent, literally and/or by the doctrine of equivalents, by making, utilizing, servicing, testing, distributing, offering, and/or offering for sale the Example Southwest Count V Products and Services for use in a manner that infringes one or more claims of the ’469 Patent. Example Southwest Count V Products and Services are especially made or adapted for infringing the ’469 Patent and have no substantial non-infringing use.

123. Exhibit 12 (claim chart) includes the Example Southwest Count V Products and Services and Example ’469 Patent Claims. As set forth in the chart, the Example Southwest Count

V Products and Services practice the technology claimed by the ’469 Patent. Accordingly, the Example Southwest Count V Products and Services incorporated in the chart satisfies all elements of the Example ’469 Patent Claims.

124. Intellectual Ventures therefore incorporates by reference in its allegations herein the claim chart of Exhibit 12.

125. Intellectual Ventures is entitled to recover damages adequate to compensate for Defendant’s infringement of the ’469 Patent and will continue to be damaged by such infringement. Intellectual Ventures is entitled to recover damages from Defendant to compensate them for Defendant’s infringement, as alleged above, in an amount measured by no less than a reasonable royalty under 35 U.S.C. § 284, as well as enhanced damages pursuant to 35 U.S.C. § 284.

126. Further, Southwest’s infringement of Intellectual Ventures’ rights under the ’469 Patent will continue to damage Intellectual Ventures’ business, causing irreparable harm for which there is no adequate remedy at law, unless enjoined by the Court.

127. As a result of Defendant’s acts of infringement, Plaintiffs have suffered and will continue to suffer damages in an amount to be proven at trial.

COUNT VI

(Southwest’s Infringement of U.S. Patent No. 7,257,582)

128. Paragraphs 1 through 127 are incorporated by reference as if fully set forth herein.

129. **Direct Infringement**. Southwest, without authorization or license from IV, has directly infringed, and continues to directly infringe, literally and/or by the doctrine of equivalents, individually and/or jointly, the ’582 Patent, by making, utilizing, servicing, testing, distributing, offering, and/or offering for sale the Accused Products and Services that infringe the ’582 Patent,

[redacted]

including but not limited to at least the Accused Products and Services identified in the example charts incorporated, per paragraph 130 below, into this Count (collectively, "Example Southwest Count VI Products and Services") that infringe at least the example claims of the '582 Patent identified in the charts incorporated into this Count (the "Example '582 Patent Claims") literally or by the doctrine of equivalents.

130. On information and belief, Southwest has also infringed and continues to directly infringe, literally or under the doctrine of equivalents, the Example '582 Patent Claims, by internal testing and use of the Example Southwest Count VI Products and Services.

131. Each claim of the '582 Patent is valid, enforceable, and patent eligible under Section 101 of the Patent Act. The '582 Patent is related to improving load balancing by parallel processing of partitioned data. The '582 Patent discloses and claims systems and methods that address technical problems that are inherent in and derive from prior art methods and systems involving the problems of enabling parallel processing involving linear processes, among other issues. The '582 Patent addressed this technical problem and others with a technical solution that is described in the specification, for example at column 1 lines 48-57, which reads that objects "of the present invention [include] enable[ing] the decomposition of a certain type of linear processes that currently use a single computer, into equivalent parallel processes that can efficiently use any number of potentially heterogeneous computers, taking the available capacity of each of these computers into account while optimizing execution …, improv[ing] processing efficiency of certain processes ..., [and] obtain[ing] better processor utilization," and captured by one or more claims. Additionally, the claims of the '582 Patent are novel and non-obvious and recite elements and steps that were not routine or conventional at the time of the invention, either individually or in combination. For example, the following claim limitations recited in claim 1 were not routine

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or conventional, as evidenced by the ’582 Patent file history: “distributing descriptions of all of said partitions to each of a plurality of subtask processors,” “simultaneously executing at least a respective one of the subtasks … in each of at least some of said processors on a respective one of the partitions …,” and “thereafter repeating step (c) in at least some of the subtask processors each with another unprocessed partition on a first-come/first-served basis.”

132. Each claim of the ’582 Patent recites an independent invention. Neither the example claims described nor any other individual claim is representative of all claims in the ’582 Patent.

133. Southwest has known that its infringing products and services, such as the Example Southwest Count VI Products and Services, cannot be used without infringing the technology claimed in the ’582 Patent, and are not staple articles of commerce suitable for substantial non-infringing uses.

134. **Willful Blindness.** Southwest knew of the ’582 Patent, or should have known of the ’582 Patent, but was willfully blind to its existence. Southwest has had actual knowledge of the ’582 Patent not later than receipt of a letter, dated September 30, 2024, and received on the same date. By the time of trial, Southwest will have known and intended (since receiving such notice) that its continued actions would infringe and actively induce and contribute to the infringement of one or more claims of the ’582 Patent. *See* Exhibit 7 (Notice Letter).

135. **Induced Infringement.** Southwest has also contributed to and/or induced, and continues to contribute to and/or induce the infringement of the ’582 Patent by contributing to and/or inducing its partners, vendors, customers, and/or third parties to use or cause to use its products and services, such as Example Southwest Count VI Products and Services, in an infringing manner as described above, including encouraging and instructing its partners, vendors,

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customers, and/or third parties to infringe the ’582 Patent. For example, on information and belief, Southwest offers products and services to its customers and third parties and/or employees that are associated with backend functionality provided by the Example Southwest Count VI Products and Services. Southwest has contributed to and/or induced, and continues to contribute to and/or induce the infringement of the ’582 Patent by offering such products and services and contributing to and/or inducing its customers and third parties and/or employees to use such products and services that are associated with backend functionality provided by the Example Southwest Count VI Products and Services.

136. Southwest therefore actively, knowingly, and intentionally has committed, and continues to commit, affirmative acts that cause infringement, literally and/or by the doctrine of equivalents, of one or more claims of the ’582 Patent with knowledge of the ’582 Patent and knowledge that the induced acts constitute infringement of one or more claims of the ’582 Patent. Southwest has actively induced others, including, but not limited to, partners, vendors, customers, and/or third parties who use the Example Southwest Count VI Products and Services to infringe the ’582 Patent, literally and/or by the doctrine of equivalents, throughout the United States, including within this District, by, among other things, advertising, promoting, and instructing the infringing use of the Example Southwest Count VI Products and Services.

137. **Contributory Infringement.** Southwest actively, knowingly, and intentionally has committed, and continues to commit contributory infringement, literally and/or by the doctrine of equivalents, by, *inter alia*, knowingly providing software and technologies that when used, cause the direct infringement of one or more claims of the ’582 Patent by its partners, vendors, customers, and/or third parties, and which have no substantial non-infringing uses, or include a separate and distinct technology that is especially made or especially adapted for use in

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infringement of the ’582 Patent, and is not a staple article or commodity of commerce suitable for substantial non-infringing use.

138. Southwest therefore actively, knowingly, and intentionally has been and continues to materially contribute to their partners’, vendors’, and/or third-parties’ infringement of the ’582 Patent, literally and/or by the doctrine of equivalents, by making, utilizing, servicing, testing, distributing, offering, and/or offering for sale the Example Southwest Count VI Products and Services for use in a manner that infringes one or more claims of the ’582 Patent. Example Southwest Count VI Products and Services are especially made or adapted for infringing the ’582 Patent and have no substantial non-infringing use.

139. Exhibits 13 and 14 (claim charts) includes the Example Southwest Count VI Products and Services and Example ’582 Patent Claims. As set forth in these charts, the Example Southwest Count VI Products and Services practice the technology claimed by the ’582 Patent. Accordingly, the Example Southwest Count VI Products and Services incorporated in these charts satisfy all elements of the Example ’582 Patent Claims.

140. Intellectual Ventures therefore incorporates by reference in its allegations herein the claim charts of Exhibits 13 and 14.

141. Intellectual Ventures is entitled to recover damages adequate to compensate for Defendant’s infringement of the ’582 Patent and will continue to be damaged by such infringement. Intellectual Ventures is entitled to recover damages from Defendant to compensate them for Defendant’s infringement, as alleged above, in an amount measured by no less than a reasonable royalty under 35 U.S.C. § 284, as well as enhanced damages pursuant to 35 U.S.C. § 284.

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142. Further, Southwest's infringement of Intellectual Ventures' rights under the '582 Patent will continue to damage Intellectual Ventures' business, causing irreparable harm for which there is no adequate remedy at law, unless enjoined by the Court.

143. As a result of Defendant's acts of infringement, Plaintiffs have suffered and will continue to suffer damages in an amount to be proven at trial.

COUNT VII

(Southwest's Infringement of U.S. Patent No. 7,712,080)

144. Paragraphs 1 through 143 are incorporated by reference as if fully set forth herein.

145. **Direct Infringement**. Southwest, without authorization or license from IV, has directly infringed, and continues to directly infringe, literally and/or by the doctrine of equivalents, individually and/or jointly, the '080 Patent, by making, utilizing, servicing, testing, distributing, offering, and/or offering for sale the Accused Products and Services that infringe the '080 Patent, including but not limited to at least the Accused Products and Services identified in the example charts incorporated, per paragraph 146 below, into this Count (collectively, "Example Southwest Count VII Products and Services") that infringe at least the example claims of the '080 Patent identified in the charts incorporated into this Count (the "Example '080 Patent Claims") literally or by the doctrine of equivalents.

146. On information and belief, Southwest has also infringed and continues to directly infringe, literally or under the doctrine of equivalents, the Example '080 Patent Claims, by internal testing and use of the Example Southwest Count VII Products and Services.

147. Each claim of the '080 Patent is valid, enforceable, and patent eligible under Section 101 of the Patent Act. The '080 Patent is related to systems and methods for parallel distributed programming over multiple processors and multiple memories including a distributed

[redacted]

shared variable. The ’080 Patent discloses and claims systems and methods that address technical problems that are inherent in and derive from prior art methods and systems involving the problems of efficiently programming tasks and threads in a parallel distributed program, among other issues. For example, the ’080 Patent describes in column 1 at lines 25-30 that software “for operation on multiple processors that uses multiple memory areas” is “more complex” and are generally referred to as “parallel distributed programs.” The Patent further describes different approaches to developing such programs at column 1 line 31 to column 2 line 2, but that existing approaches were problematic because developing source code “may be burdensome to develop because programming the multiple tasks and threads and having them send and receive messages to each other may dramatically change the code structure and data structure of the original algorithm” or are ”generally not as efficient” because they “may require a transfer of large amounts of data from the memory” on different processor(s) and “thus may not satisfy the need for high performance parallel computing.” The ’080 Patent further describes that “improved systems and methods for parallel distributed programming are desirable” at column 2 lines 3-4. The ’080 Patent addressed this technical problem and others with a technical solution that is described in the specification and captured by the asserted claims, including claim 1. Additionally, the claims of the ’080 Patent are novel and non-obvious and recite elements and steps that were not routine or conventional at the time of the invention, either individually or in combination. For example, the following claim limitations recited in claim 9 were not routine or conventional, as evidenced by the ’080 Patent file history: “transforming the at least one distributed sequential computing program into at least one distributed parallel computing program by spawning at least one child distributed sequential computing program from the at least one distributed sequential computing program when at least one intermediate condition occurs within the at least one distributed sequential computing

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program, wherein the at least one distributed parallel computing program concurrently uses the at least one distributed sequential computing program and the at least one spawned child distributed sequential computing program to perform parallel processing and/or operations, wherein the at least one intermediate condition comprising one intermediate result that will be required by the at least one spawned child distributed sequential computing program to continue computation."

148. Each claim of the '080 Patent recites an independent invention. Neither the example claims described nor any other individual claim is representative of all claims in the '080 Patent.

149. Southwest has known that its infringing products and services, such as the Example Southwest Count VII Products and Services, cannot be used without infringing the technology claimed in the '080 Patent, and are not staple articles of commerce suitable for substantial non-infringing uses.

150. **Willful Blindness.** Southwest knew of the '080 Patent, or should have known of the '080 Patent, but was willfully blind to its existence. Southwest has had actual knowledge of the '080 Patent. By the time of trial, Southwest will have known and intended that its continued actions would infringe and actively induce and contribute to the infringement of one or more claims of the '080 Patent.

151. **Induced Infringement.** Southwest has also contributed to and/or induced, and continues to contribute to and/or induce the infringement of the '080 Patent by contributing to and/or inducing its partners, vendors, customers, and/or third parties to use or cause to use its products and services, such as Example Southwest Count VII Products and Services, in an infringing manner as described above, including encouraging and instructing its partners, vendors, customers, and/or third parties to infringe the '080 Patent. For example, on information and belief,

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Southwest offers products and services to its customers and third parties and/or employees that are associated with backend functionality provided by the Example Southwest Count VII Products and Services. Southwest has contributed to and/or induced, and continues to contribute to and/or induce the infringement of the ’080 Patent by offering such products and services and contributing to and/or inducing its customers and third parties and/or employees to use such products and services that are associated with backend functionality provided by the Example Southwest Count VII Products and Services.

152. Southwest therefore actively, knowingly, and intentionally has committed, and continues to commit, affirmative acts that cause infringement, literally and/or by the doctrine of equivalents, of one or more claims of the ’080 Patent with knowledge of the ’080 Patent and knowledge that the induced acts constitute infringement of one or more claims of the ’080 Patent. Southwest has actively induced others, including, but not limited to, partners, vendors, customers, and/or third parties who use the Example Southwest Count VII Products and Services to infringe the ’080 Patent, literally and/or by the doctrine of equivalents, throughout the United States, including within this District, by, among other things, advertising, promoting, and instructing the infringing use of the Example Southwest Count VII Products and Services.

153. **Contributory Infringement.** Southwest actively, knowingly, and intentionally has committed, and continues to commit contributory infringement, literally and/or by the doctrine of equivalents, by, *inter alia*, knowingly providing software and technologies that when used, cause the direct infringement of one or more claims of the ’080 Patent by its partners, vendors, customers, and/or third parties, and which have no substantial non-infringing uses, or include a separate and distinct technology that is especially made or especially adapted for use in

[redacted]

infringement of the ’080 Patent, and is not a staple article or commodity of commerce suitable for substantial non-infringing use.

154. Southwest therefore actively, knowingly, and intentionally has been and continues to materially contribute to their partners’, vendors’, and/or third-parties’ infringement of the ’080 Patent, literally and/or by the doctrine of equivalents, by making, utilizing, servicing, testing, distributing, offering, and/or offering for sale the Example Southwest Count VII Products and Services for use in a manner that infringes one or more claims of the ’080 Patent. Example Southwest Count VII Products and Services are especially made or adapted for infringing the ’080 Patent and have no substantial non-infringing use.

155. Exhibit 20 (claim chart) includes the Example Southwest Count VII Products and Services and Example ’080 Patent Claims. As set forth in these charts, the Example Southwest Count VII Products and Services practice the technology claimed by the ’080 Patent. Accordingly, the Example Southwest Count VII Products and Services incorporated in these charts satisfy all elements of the Example ’080 Patent Claims.

156. Intellectual Ventures therefore incorporates by reference in its allegations herein the claim chart of Exhibit 20.

157. Intellectual Ventures is entitled to recover damages adequate to compensate for Defendant’s infringement of the ’080 Patent and will continue to be damaged by such infringement. Intellectual Ventures is entitled to recover damages from Defendant to compensate them for Defendant’s infringement, as alleged above, in an amount measured by no less than a reasonable royalty under 35 U.S.C. § 284, as well as enhanced damages pursuant to 35 U.S.C. § 284.

158. Further, Southwest's infringement of Intellectual Ventures' rights under the '080 Patent will continue to damage Intellectual Ventures' business, causing irreparable harm for which there is no adequate remedy at law, unless enjoined by the Court.

159. As a result of Defendant's acts of infringement, Plaintiffs have suffered and will continue to suffer damages in an amount to be proven at trial.

COUNT VIII

(Southwest's Infringement of U.S. Patent No. 7,822,841)

160. Paragraphs 1 through 159 are incorporated by reference as if fully set forth herein.

161. **Direct Infringement**. Southwest, without authorization or license from IV, has directly infringed, and continues to directly infringe, literally and/or by the doctrine of equivalents, individually and/or jointly, the '841 Patent, by making, utilizing, servicing, testing, distributing, offering, and/or offering for sale the Accused Products and Services that infringe the '841 Patent, including but not limited to at least the Accused Products and Services identified in the example charts incorporated, per paragraph 162 below, into this Count (collectively, "Example Southwest Count VIII Products and Services") that infringe at least the example claims of the '841 Patent identified in the charts incorporated into this Count (the "Example '841 Patent Claims") literally or by the doctrine of equivalents.

162. On information and belief, Southwest has also infringed and continues to directly infringe, literally or under the doctrine of equivalents, the Example '841 Patent Claims, by internal testing and use of the Example Southwest Count VIII Products and Services.

163. Each claim of the '841 Patent is valid, enforceable, and patent eligible under Section 101 of the Patent Act. The '841 Patent is related to secure, customizable computer clusters and detecting cluster-level and node-level issues. The '841 Patent discloses and claims systems

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and methods that address technical problems that are inherent in and derive from prior art methods and systems involving the problems of multi-cluster configuration management and efficient usage of cluster resources, among other issues. For example, the '841 Patent describes that multi-clusters or multiple clusters can be used to perform various tasks, but that they raise technical issues because of their technical complexity for example by "consum[ing] a much larger set of resources and be[coming] even more expensive to maintain" (at column 2 lines 22-25) and raise technical issues in "monitoring the individual cluster components" (at column 4 lines 19-27). The '841 Patent addressed this technical problem and others with a technical solution that is described in the specification and captured by the asserted claims including claim 1. The Patent further describes attempts to address these technical issues with multi-cluster environments, all of which have failed at column 2 lines 25-44. Additionally, the claims of the '841 Patent are novel and non-obvious and recite elements and steps that were not routine or conventional at the time of the invention, either individually or in combination. For example, the following claim limitations recited in claim 1 were not routine or conventional, as evidenced by the '841 Patent file history: "a monitoring system monitoring operations of the first and second clusters, identifying operational and connectivity problems, and issuing an alert in response to the identified problems indicating a corresponding one of the first and second clusters associated with the identified problems"; and "wherein the monitoring system comprises a main monitor that operates to monitor the first and second clusters to identify the operation and connectivity problems and further comprises monitors for each node of the first and second clusters operating to check for hardware and software problems within a particular node and to report the hardware and software problems to the main monitor."

[redacted]

164. Each claim of the ’841 Patent recites an independent invention. Neither the example claims described nor any other individual claim is representative of all claims in the ’841 Patent.

165. Southwest has known that its infringing products and services, such as the Example Southwest Count VIII Products and Services, cannot be used without infringing the technology claimed in the ’841 Patent, and are not staple articles of commerce suitable for substantial non-infringing uses.

166. **Willful Blindness.** Southwest knew of the ’841 Patent, or should have known of the ’841 Patent, but was willfully blind to its existence. Southwest has had actual knowledge of the ’841 Patent. By the time of trial, Southwest will have known and intended that its continued actions would infringe and actively induce and contribute to the infringement of one or more claims of the ’841 Patent.

167. **Induced Infringement.** Southwest has also contributed to and/or induced, and continues to contribute to and/or induce the infringement of the ’841 Patent by contributing to and/or inducing its partners, vendors, customers, and/or third parties to use or cause to use its products and services, such as Example Southwest Count VIII Products and Services, in an infringing manner as described above, including encouraging and instructing its partners, vendors, customers, and/or third parties to infringe the ’841 Patent. For example, on information and belief, Southwest offers products and services to its customers and third parties and/or employees that are associated with backend functionality provided by the Example Southwest Count VIII Products and Services. Southwest has contributed to and/or induced, and continues to contribute to and/or induce the infringement of the ’841 Patent by offering such products and services and contributing to and/or inducing its customers and third parties and/or employees to use such products and

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services that are associated with backend functionality provided by the Example Southwest Count VIII Products and Services.

168. Southwest therefore actively, knowingly, and intentionally has committed, and continues to commit, affirmative acts that cause infringement, literally and/or by the doctrine of equivalents, of one or more claims of the ’841 Patent with knowledge of the ’841 Patent and knowledge that the induced acts constitute infringement of one or more claims of the ’841 Patent. Southwest has actively induced others, including, but not limited to, partners, vendors, customers, and/or third parties who use the Example Southwest Count VIII Products and Services to infringe the ’841 Patent, literally and/or by the doctrine of equivalents, throughout the United States, including within this District, by, among other things, advertising, promoting, and instructing the infringing use of the Example Southwest Count VIII Products and Services.

169. **Contributory Infringement.** Southwest actively, knowingly, and intentionally has committed, and continues to commit contributory infringement, literally and/or by the doctrine of equivalents, by, *inter alia*, knowingly providing software and technologies that when used, cause the direct infringement of one or more claims of the ’841 Patent by its partners, vendors, customers, and/or third parties, and which have no substantial non-infringing uses, or include a separate and distinct technology that is especially made or especially adapted for use in infringement of the ’841 Patent, and is not a staple article or commodity of commerce suitable for substantial non-infringing use.

170. Southwest therefore actively, knowingly, and intentionally has been and continues to materially contribute to their partners’, vendors’, and/or third-parties’ infringement of the ’841 Patent, literally and/or by the doctrine of equivalents, by making, utilizing, servicing, testing, distributing, offering, and/or offering for sale the Example Southwest Count VIII Products and

Services for use in a manner that infringes one or more claims of the '841 Patent. Example Southwest Count VIII Products and Services are especially made or adapted for infringing the '841 Patent and have no substantial non-infringing use.

171. Exhibit 21 (claim chart) includes the Example Southwest Count VIII Products and Services and Example '841 Patent Claims. As set forth in these charts, the Example Southwest Count VIII Products and Services practice the technology claimed by the '841 Patent. Accordingly, the Example Southwest Count VIII Products and Services incorporated in these charts satisfy all elements of the Example '841 Patent Claims.

172. Intellectual Ventures therefore incorporates by reference in its allegations herein the claim chart of Exhibit 21.

173. Intellectual Ventures is entitled to recover damages adequate to compensate for Defendant's infringement of the '841 Patent and will continue to be damaged by such infringement. Intellectual Ventures is entitled to recover damages from Defendant to compensate them for Defendant's infringement, as alleged above, in an amount measured by no less than a reasonable royalty under 35 U.S.C. § 284, as well as enhanced damages pursuant to 35 U.S.C. § 284.

174. Further, Southwest's infringement of Intellectual Ventures' rights under the '841 Patent will continue to damage Intellectual Ventures' business, causing irreparable harm for which there is no adequate remedy at law, unless enjoined by the Court.

175. As a result of Defendant's acts of infringement, Plaintiffs have suffered and will continue to suffer damages in an amount to be proven at trial.

COUNT IX

(Southwest's Infringement of U.S. Patent No. 8,352,584)

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[redacted]

176. Paragraphs 1 through 175 are incorporated by reference as if fully set forth herein.

177. **Direct Infringement**. Southwest, without authorization or license from IV, has directly infringed, and continues to directly infringe, literally and/or by the doctrine of equivalents, individually and/or jointly, the ’584 Patent, by making, utilizing, servicing, testing, distributing, offering, and/or offering for sale the Accused Products and Services that infringe the ’584 Patent, including but not limited to at least the Accused Products and Services identified in the example charts incorporated, per paragraph 178 below, into this Count (collectively, “Example Southwest Count IX Products and Services”) that infringe at least the example claims of the ’584 Patent identified in the charts incorporated into this Count (the “Example ’584 Patent Claims”) literally or by the doctrine of equivalents.

178. On information and belief, Southwest has also infringed and continues to directly infringe, literally or under the doctrine of equivalents, the Example ’584 Patent Claims, by internal testing and use of the Example Southwest Count IX Products and Services.

179. Each claim of the ’584 Patent is valid, enforceable, and patent eligible under Section 101 of the Patent Act. The ’584 Patent is related to secure, customizable computer clusters and detecting cluster-level and node-level issues. The ’584 Patent discloses and claims systems and methods that address technical problems that are inherent in and derive from prior art methods and systems involving the problems of multi-cluster configuration management and efficient usage of cluster resources, among other issues. For example, the ’584 Patent at column 1 lines 39-43 and column 2 lines 12-20 describes issues with setup, configuration, and management of multi-cluster environments, and also describes at column 2 lines 26-51 the need for multi-cluster systems that are configured to a computing task, and describes multiple failed attempts at solutions to issues involving multi-cluster systems. The ’584 Patent addressed this technical problem and others with

a technical solution that is described in the specification for example at column 2 line 64 to column 3 line 3 and captured by one or more claims, including for example claim 1. Additionally, the claims of the ’584 Patent are novel and non-obvious and recite elements and steps that were not routine or conventional at the time of the invention, either individually or in combination. For example, the following claim limitations recited in claim 1 were not routine or conventional, as evidenced by the ’584 Patent file history: “a monitoring system to monitor operations of the first cluster or the second cluster for communication problems,” “wherein the first cluster establishes communications between the set of computing resources of the first cluster and a first gateway communicatively linked between the first cluster and the private communications network,” and “wherein the second cluster establishes communications among the set of computing resources of the second cluster and a second gateway communicatively linked between the second cluster and the private communications network,” and “wherein communications between the first cluster and the second cluster are isolated.”

180. Each claim of the ’584 Patent recites an independent invention. Neither the example claims described nor any other individual claim is representative of all claims in the ’584 Patent.

181. Southwest has known that its infringing products and services, such as the Example Southwest Count IX Products and Services, cannot be used without infringing the technology claimed in the ’584 Patent, and are not staple articles of commerce suitable for substantial non-infringing uses.

182. **Willful Blindness.** Southwest knew of the ’584 Patent, or should have known of the ’584 Patent, but was willfully blind to its existence. Southwest has had actual knowledge of the ’584 Patent. By the time of trial, Southwest will have known and intended that its continued

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actions would infringe and actively induce and contribute to the infringement of one or more claims of the ’584 Patent.

183. **Induced Infringement.** Southwest has also contributed to and/or induced, and continues to contribute to and/or induce the infringement of the ’584 Patent by contributing to and/or inducing its partners, vendors, customers, and/or third parties to use or cause to use its products and services, such as Example Southwest Count IX Products and Services, in an infringing manner as described above, including encouraging and instructing its partners, vendors, customers, and/or third parties to infringe the ’584 Patent. For example, on information and belief, Southwest offers products and services to its customers and third parties and/or employees that are associated with backend functionality provided by the Example Southwest Count IX Products and Services. Southwest has contributed to and/or induced, and continues to contribute to and/or induce the infringement of the ’584 Patent by offering such products and services and contributing to and/or inducing its customers and third parties and/or employees to use such products and services that are associated with backend functionality provided by the Example Southwest Count IX Products and Services.

184. Southwest therefore actively, knowingly, and intentionally has committed, and continues to commit, affirmative acts that cause infringement, literally and/or by the doctrine of equivalents, of one or more claims of the ’584 Patent with knowledge of the ’584 Patent and knowledge that the induced acts constitute infringement of one or more claims of the ’584 Patent. Southwest has actively induced others, including, but not limited to, partners, vendors, customers, and/or third parties who use the Example Southwest Count IX Products and Services to infringe the ’584 Patent, literally and/or by the doctrine of equivalents, throughout the United States,

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including within this District, by, among other things, advertising, promoting, and instructing the infringing use of the Example Southwest Count IX Products and Services.

185. **Contributory Infringement.** Southwest actively, knowingly, and intentionally has committed, and continues to commit contributory infringement, literally and/or by the doctrine of equivalents, by, *inter alia*, knowingly providing software and technologies that when used, cause the direct infringement of one or more claims of the ’584 Patent by its partners, vendors, customers, and/or third parties, and which have no substantial non-infringing uses, or include a separate and distinct technology that is especially made or especially adapted for use in infringement of the ’584 Patent, and is not a staple article or commodity of commerce suitable for substantial non-infringing use.

186. Southwest therefore actively, knowingly, and intentionally has been and continues to materially contribute to their partners’, vendors’, and/or third-parties’ infringement of the ’584 Patent, literally and/or by the doctrine of equivalents, by making, utilizing, servicing, testing, distributing, offering, and/or offering for sale the Example Southwest Count IX Products and Services for use in a manner that infringes one or more claims of the ’584 Patent. Example Southwest Count IX Products and Services are especially made or adapted for infringing the ’584 Patent and have no substantial non-infringing use.

187. Exhibit 22 (claim chart) includes the Example Southwest Count IX Products and Services and Example ’584 Patent Claims. As set forth in these charts, the Example Southwest Count IX Products and Services practice the technology claimed by the ’584 Patent. Accordingly, the Example Southwest Count IX Products and Services incorporated in these charts satisfy all elements of the Example ’584 Patent Claims.

188. Intellectual Ventures therefore incorporates by reference in its allegations herein the claim chart of Exhibit 22.

189. Intellectual Ventures is entitled to recover damages adequate to compensate for Defendant's infringement of the '584 Patent and will continue to be damaged by such infringement. Intellectual Ventures is entitled to recover damages from Defendant to compensate them for Defendant's infringement, as alleged above, in an amount measured by no less than a reasonable royalty under 35 U.S.C. § 284, as well as enhanced damages pursuant to 35 U.S.C. § 284.

190. Further, Southwest's infringement of Intellectual Ventures' rights under the '584 Patent will continue to damage Intellectual Ventures' business, causing irreparable harm for which there is no adequate remedy at law, unless enjoined by the Court.

191. As a result of Defendant's acts of infringement, Plaintiffs have suffered and will continue to suffer damages in an amount to be proven at trial.

COUNT X

(Southwest's Infringement of U.S. Patent No. 11,032,000)

192. Paragraphs 1 through 191 are incorporated by reference as if fully set forth herein.

193. **Direct Infringement**. Southwest, without authorization or license from IV, has directly infringed, and continues to directly infringe, literally and/or by the doctrine of equivalents, individually and/or jointly, the '000 Patent, by making, utilizing, servicing, testing, distributing, offering, and/or offering for sale the Accused Products and Services that infringe the '000 Patent, including but not limited to at least the Accused Products and Services identified in the example charts incorporated, per paragraph 194 below, into this Count (collectively, "Example Southwest Count X Products and Services") that infringe at least the example claims of the '000 Patent

[redacted]

identified in the charts incorporated into this Count (the "Example '000 Patent Claims") literally or by the doctrine of equivalents.

194. On information and belief, Southwest has also infringed and continues to directly infringe, literally or under the doctrine of equivalents, the Example '000 Patent Claims, by internal testing and use of the Example Southwest Count X Products and Services.

195. Each claim of the '000 Patent is valid, enforceable, and patent eligible under Section 101 of the Patent Act. The '000 Patent is related to improving user equipment (UE) devices by improving UE uplink channel control. The '000 Patent discloses and claims systems and methods that address technical problems that are inherent in and derive from prior art methods and systems involving the problems of lack of correlation between uplink and downlink path loss, among other issues. For example, the '000 Patent describes at column 1 lines 29-40 channel reciprocity, which "gives equipment the ability to derive information about uplink channel conditions from downlink channel conditions based on upon signals received by the user equipment (UE)." The Patent further describes that channel reciprocity "cannot always be guaranteed," for example when "TDD transmissions [are not] permitted in certain frequency spectrum allocations," resulting in losing "correlation between uplink and downlink channels" at column 1 lines 53-64. The Patent further describes that, "in high speed mobile applications, the time delay between downlink and uplink transmissions may exceed the coherence time of the channel," which can be tolerated only to a certain degree, and the "use of multiple transmit and/or receive antennas at the network and/or the mobile terminal can introduce unintentional decorrelation between the uplink and downlink channels" at column 1 line 65 to column 2 line 7. The Patent then describes that "it would be advantageous to find a substitute for channel reciprocity" where correlation between an uplink and downlink path loss is not guaranteed at

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column 2 lines 8 -11. The ’000 Patent addressed this technical problem and others with a technical solution that is described in the specification and captured by the asserted claims including claim 1. Additionally, the claims of the ’000 Patent are novel and non-obvious and recite elements and steps that were not routine or conventional at the time of the invention, either individually or in combination. For example, the following claim limitations recited in claim 14 were not routine or conventional, as evidenced by the ’000 Patent file history: “the transmitter and the processor are further configured, in a time interval that it is not sending information over the physical uplink shared channel, to send the uplink physical signal based on the received resource allocation information, wherein the uplink physical signal is used to determine channel conditions by a base station and in the same time interval that the uplink physical signal is sent, a plurality of UEs transmit uplink physical signals in the same time interval”; and “the receiver and the processor are further configured to receive, on a physical control channel, control information, wherein the control information is based on the determined channel conditions, wherein physical control channels are transmitted in a same time slot with other physical channels in a plurality of predetermined time slots in a downlink frame, wherein other time slots of the downlink frame do not include a physical control channel, wherein a number of bits sent over the physical control channel is based on a number of fields of control information to be sent to the UE.”

196. Each claim of the ’000 Patent recites an independent invention. Neither the example claims described nor any other individual claim is representative of all claims in the ’000 Patent.

197. Southwest has known that its infringing products and services, such as the Example Southwest Count X Products and Services, cannot be used without infringing the technology

[redacted]

claimed in the ’000 Patent, and are not staple articles of commerce suitable for substantial non-infringing uses.

198. **Willful Blindness.** Southwest knew of the ’000 Patent, or should have known of the ’000 Patent, but was willfully blind to its existence. Southwest has had actual knowledge of the ’000 Patent. By the time of trial, Southwest will have known and intended that its continued actions would infringe and actively induce and contribute to the infringement of one or more claims of the ’000 Patent.

199. **Induced Infringement.** Southwest has also contributed to and/or induced, and continues to contribute to and/or induce the infringement of the ’000 Patent by contributing to and/or inducing its partners, vendors, customers, and/or third parties to use or cause to use its products and services, such as Example Southwest Count X Products and Services, in an infringing manner as described above, including encouraging and instructing its partners, vendors, customers, and/or third parties to infringe the ’000 Patent. For example, on information and belief, Southwest offers products and services to its customers and third parties that are associated with wireless functionality provided by the Example Southwest Count X Products and Services. Southwest has contributed to and/or induced, and continues to contribute to and/or induce the infringement of the ’000 Patent by offering such products and services and contributing to and/or inducing its customers and third parties and/or employees to use such products and services that are associated with wireless functionality provided by the Example Southwest Count X Products and Services.

200. Southwest therefore actively, knowingly, and intentionally has committed, and continues to commit, affirmative acts that cause infringement, literally and/or by the doctrine of equivalents, of one or more claims of the ’000 Patent with knowledge of the ’000 Patent and knowledge that the induced acts constitute infringement of one or more claims of the ’000 Patent.

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[redacted]

Southwest has actively induced others, including, but not limited to, partners, vendors, customers, and/or third parties who use the Example Southwest Count X Products and Services to infringe the ’000 Patent, literally and/or by the doctrine of equivalents, throughout the United States, including within this District, by, among other things, advertising, promoting, and instructing the infringing use of the Example Southwest Count X Products and Services.

201. **Contributory Infringement.** Southwest actively, knowingly, and intentionally has committed, and continues to commit contributory infringement, literally and/or by the doctrine of equivalents, by, *inter alia*, knowingly providing software and technologies that when used, cause the direct infringement of one or more claims of the ’000 Patent by its partners, vendors, customers, and/or third parties, and which have no substantial non-infringing uses, or include a separate and distinct technology that is especially made or especially adapted for use in infringement of the ’000 Patent, and is not a staple article or commodity of commerce suitable for substantial non-infringing use.

202. Southwest therefore actively, knowingly, and intentionally has been and continues to materially contribute to their partners’, vendors’, and/or third-parties’ infringement of the ’000 Patent, literally and/or by the doctrine of equivalents, by making, utilizing, servicing, testing, distributing, offering, and/or offering for sale the Example Southwest Count X Products and Services for use in a manner that infringes one or more claims of the ’000 Patent. Example Southwest Count X Products and Services are especially made or adapted for infringing the ’000 Patent and have no substantial non-infringing use.

203. Exhibit 23 (claim chart) includes the Example Southwest Count X Products and Services and Example ’000 Patent Claims. As set forth in these charts, the Example Southwest Count X Products and Services practice the technology claimed by the ’000 Patent. Accordingly,

the Example Southwest Count X Products and Services incorporated in these charts satisfy all elements of the Example ’000 Patent Claims.

204. Intellectual Ventures therefore incorporates by reference in its allegations herein the claim chart of Exhibit 23.

205. Intellectual Ventures is entitled to recover damages adequate to compensate for Defendant’s infringement of the ’000 Patent and will continue to be damaged by such infringement. Intellectual Ventures is entitled to recover damages from Defendant to compensate them for Defendant’s infringement, as alleged above, in an amount measured by no less than a reasonable royalty under 35 U.S.C. § 284, as well as enhanced damages pursuant to 35 U.S.C. § 284.

206. Further, Southwest’s infringement of Intellectual Ventures’ rights under the ’000 Patent will continue to damage Intellectual Ventures’ business, causing irreparable harm for which there is no adequate remedy at law, unless enjoined by the Court.

207. As a result of Defendant’s acts of infringement, Plaintiffs have suffered and will continue to suffer damages in an amount to be proven at trial.

COUNT XI

(Southwest’s Infringement of U.S. Patent No. 7,721,282)

208. Paragraphs 1 through 207 are incorporated by reference as if fully set forth herein.

209. **Direct Infringement**. Southwest, without authorization or license from IV, has directly infringed, and continues to directly infringe, literally and/or by the doctrine of equivalents, individually and/or jointly, the ’282 Patent, by making, utilizing, servicing, testing, distributing, offering, and/or offering for sale the Accused Products and Services that infringe the ’282 Patent, including but not limited to at least the Accused Products and Services identified in the example

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charts incorporated, per paragraph 210 below, into this Count (collectively, "Example Southwest Count XI Products and Services") that infringe at least the example claims of the '282 Patent identified in the charts incorporated into this Count (the "Example '282 Patent Claims") literally or by the doctrine of equivalents.

210. On information and belief, Southwest has also infringed and continues to directly infringe, literally or under the doctrine of equivalents, the Example '282 Patent Claims, by internal testing and use of the Example Southwest Count XI Products and Services.

211. Each claim of the '282 Patent is valid, enforceable, and patent eligible under Section 101 of the Patent Act. The '282 Patent is related to distributing an application environment to a compute node involving root nodes and leaf nodes in a clustered computer system. The '282 Patent discloses and claims systems and methods that address technical problems that are inherent in and derive from prior art methods and systems involving the problems of improving boot or bring-up time in clustered computing systems and reducing wasted disk space, among other issues. For example, the '282 Patent describes at column 1 lines 54-57 that "[r]egardless of which of the preceding methods is used, both suffer from the same major problem-updating the boot image(s) for the cluster is cumbersome, as it means updating a number of copies of the boot image." The '282 Patent addressed this technical problem and others with a technical solution that is reflected in the asserted claims, including for example claim 1. Additionally, the claims of the '282 Patent are novel and non-obvious and recite elements and steps that were not routine or conventional at the time of the invention, either individually or in combination. For example, the following claim limitations recited in claim 1 were not routine or conventional, as evidenced by the '282 Patent file history: "wherein the union block device creates the application environment by merging the

blocks of the root image stored on the first storage unit with the blocks of the leaf image stored on the second storage unit."

212. Each claim of the '282 Patent recites an independent invention. Neither the example claims described nor any other individual claim is representative of all claims in the '282 Patent.

213. Southwest has known that its infringing products and services, such as the Example Southwest Count XI Products and Services, cannot be used without infringing the technology claimed in the '282 Patent, and are not staple articles of commerce suitable for substantial non-infringing uses.

214. **Willful Blindness.** Southwest knew of the '282 Patent, or should have known of the '282 Patent, but was willfully blind to its existence. Southwest has had actual knowledge of the '282 Patent. By the time of trial, Southwest will have known and intended that its continued actions would infringe and actively induce and contribute to the infringement of one or more claims of the '282 Patent.

215. **Induced Infringement.** Southwest has also contributed to and/or induced, and continues to contribute to and/or induce the infringement of the '282 Patent by contributing to and/or inducing its partners, vendors, customers, and/or third parties to use or cause to use its products and services, such as Example Southwest Count XI Products and Services, in an infringing manner as described above, including encouraging and instructing its partners, vendors, customers, and/or third parties to infringe the '282 Patent. For example, on information and belief, Southwest offers products and services to its customers and third parties and/or employees that are associated with backend functionality provided by the Example Southwest Count XI Products and Services. Southwest has contributed to and/or induced, and continues to contribute to and/or

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induce the infringement of the ’282 Patent by offering such products and services and contributing to and/or inducing its customers and third parties and/or employees to use such products and services that are associated with backend functionality provided by the Example Southwest Count XI Products and Services.

216. Southwest therefore actively, knowingly, and intentionally has committed, and continues to commit, affirmative acts that cause infringement, literally and/or by the doctrine of equivalents, of one or more claims of the ’282 Patent with knowledge of the ’282 Patent and knowledge that the induced acts constitute infringement of one or more claims of the ’282 Patent. Southwest has actively induced others, including, but not limited to, partners, vendors, customers, and/or third parties who use the Example Southwest Count XI Products and Services to infringe the ’282 Patent, literally and/or by the doctrine of equivalents, throughout the United States, including within this District, by, among other things, advertising, promoting, and instructing the infringing use of the Example Southwest Count XI Products and Services.

217. **Contributory Infringement.** Southwest actively, knowingly, and intentionally has committed, and continues to commit contributory infringement, literally and/or by the doctrine of equivalents, by, *inter alia*, knowingly providing software and technologies that when used, cause the direct infringement of one or more claims of the ’282 Patent by its partners, vendors, customers, and/or third parties, and which have no substantial non-infringing uses, or include a separate and distinct technology that is especially made or especially adapted for use in infringement of the ’282 Patent, and is not a staple article or commodity of commerce suitable for substantial non-infringing use.

218. Southwest therefore actively, knowingly, and intentionally has been and continues to materially contribute to their partners’, vendors’, and/or third-parties’ infringement of the ’282

Patent, literally and/or by the doctrine of equivalents, by making, utilizing, servicing, testing, distributing, offering, and/or offering for sale the Example Southwest Count XI Products and Services for use in a manner that infringes one or more claims of the ’282 Patent. Example Southwest Count XI Products and Services are especially made or adapted for infringing the ’282 Patent and have no substantial non-infringing use.

219. Exhibit 24 (claim chart) includes the Example Southwest Count XI Products and Services and Example ’282 Patent Claims. As set forth in these charts, the Example Southwest Count XI Products and Services practice the technology claimed by the ’282 Patent. Accordingly, the Example Southwest Count XI Products and Services incorporated in these charts satisfy all elements of the Example ’282 Patent Claims.

220. Intellectual Ventures therefore incorporates by reference in its allegations herein the claim chart of Exhibit 24.

221. Intellectual Ventures is entitled to recover damages adequate to compensate for Defendant’s infringement of the ’282 Patent and will continue to be damaged by such infringement. Intellectual Ventures is entitled to recover damages from Defendant to compensate them for Defendant’s infringement, as alleged above, in an amount measured by no less than a reasonable royalty under 35 U.S.C. § 284, as well as enhanced damages pursuant to 35 U.S.C. § 284.

222. Further, Southwest’s infringement of Intellectual Ventures’ rights under the ’282 Patent will continue to damage Intellectual Ventures’ business, causing irreparable harm for which there is no adequate remedy at law, unless enjoined by the Court.

223. As a result of Defendant’s acts of infringement, Plaintiffs have suffered and will continue to suffer damages in an amount to be proven at trial.

MARKING

224. Plaintiffs do not make or sell products and thus have no products to mark.

225. To the extent any of the Patents-in-Suit include only asserted method claims, the marking requirement of 35 U.S.C. § 287 for those Patents-in-Suit does not apply. Therefore, Plaintiff has complied with all applicable requirements of § 287 for those Patents-in-Suit, such that it is entitled to past damages for infringement.

226. Plaintiffs have entered into settlement licenses with other entities. None of the settlement licenses were to produce a patented article for Plaintiffs or under the Patents-in-Suit. Duties of confidentiality prevent disclosure of settlement licenses and their terms in this Complaint, but discovery will show that Plaintiffs have substantially complied with 35 U.S.C. § 287(a). Furthermore, each of the entities in the settlement licenses denied infringing any of the Patents-in-Suit and thus were not entering into the settlement license to produce a patented article for Plaintiffs or under the Patents-in-Suit.

227. Each settlement license that was entered into between an entity and Plaintiffs was negotiated in the face of continued litigation and while Plaintiffs believe there was infringement, no defendant entity agreed or admitted that it was infringing.

DEMAND FOR JURY TRIAL

228. Under Rule 38(b) of the Federal Rules of Civil Procedure, Plaintiffs respectfully request a trial by jury on all issues so triable.

PRAYER FOR RELIEF

WHEREFORE, Plaintiffs respectfully request the following relief:

A. A judgment that the Patents-in-Suit are valid and enforceable;

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B. A judgment that Defendant directly infringes, contributorily infringes, and/or actively induces infringement of one or more claims of *each of* the Patents-in-Suit;

C. A judgment that awards Plaintiffs all damages adequate to compensate them for Defendant's direct infringement, willful infringement, contributory infringement, and/or induced infringement of the Patents-in-Suit, including all pre- judgment and post- judgment interest at the maximum rate permitted by law;

D. A judgment that awards Plaintiffs all appropriate damages under 35 U.S.C. § 284 for Defendant's past infringement with respect to the Patents-in-Suit;

E. A judgment that awards Plaintiffs all appropriate damages under 35 U.S.C. § 284 for Defendant's infringement of the '844 Patent, '722 Patent, '785 Patent, '326 Patent, '469 Patent, '582 Patent, '080 Patent, '282 Patent, '841 Patent, '584 Patent, and '000 Patent, which continue to damage Plaintiffs' business, causing irreparable harm for which there is no adequate remedy at law, unless enjoined by the Court;

F. A judgment that awards Plaintiffs all appropriate damages under 35 U.S.C. § 284 for Defendant's continuing or future infringement, up until the date such judgment is entered with respect to the Patents-in-Suit, including ongoing royalties, pre- and post-judgment interest, costs, and disbursements as justified under 35 U.S.C. § 284;

G. A judgment that this case is exceptional under 35 U.S.C. § 285;

H. An accounting of all damages not presented at trial; and

I. A judgment that awards Plaintiffs their costs, disbursements, attorneys' fees, and such further and additional relief as is deemed appropriate by the Court.

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Dated: September 2, 2025

RESPECTFULLY SUBMITTED,

By: */s/ Jonathan K. Waldrop*

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing instrument was served or delivered electronically to all counsel of record, via email, on this 2nd day of September, 2025.

/s/ Jonathan K. Waldrop
Jonathan K. Waldrop