

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

**VIRTUAL IMMERSION
TECHNOLOGIES LLC,**

Plaintiff,

v.

RAYTHEON COMPANY,

Defendant.

Civil Action No. _____

PATENT CASE

JURY TRIAL DEMANDED

**ORIGINAL COMPLAINT
FOR PATENT INFRINGEMENT AGAINST RAYTHEON COMPANY**

Plaintiff Virtual Immersion Technologies LLC (“VIT” or “Plaintiff”), by and through its attorneys, hereby alleges for its Complaint against Defendant Raytheon Company, (“Raytheon” or “Defendant”) on personal knowledge as to its own activities and on information and belief as to all other matters, as follows:

NATURE OF THE ACTION

1. This is an action for patent infringement arising under the Patent Laws of the United States, 35 U.S.C. § 1 *et seq.*

THE PARTIES

2. Plaintiff Virtual Immersion Technologies LLC is a limited liability company organized under the laws of the State of Texas.

3. Defendant Raytheon Company is a Delaware corporation with a place of business at 870 Winter Street, Waltham, Massachusetts 02451, and can be served through its registered

agent, the Corporation Trust Company, Corporation Trust Center, 1209 Orange Street, Wilmington Delaware 19801.

JURISDICTION AND VENUE

4. Raytheon is subject to this Court's specific and general personal jurisdiction, pursuant to due process and/or the Delaware Long-Arm Statute, due at least to its substantial business in this forum, including at least a portion of the infringements alleged herein.

5. Raytheon is subject to this Court's specific and general personal jurisdiction because Raytheon is a Delaware corporation. Raytheon may be served with process via its registered agent, the Corporation Trust Company, Corporation Trust Center, 1209 Orange Street, Wilmington Delaware 19801.

6. Raytheon has committed and continues to commit acts of infringement within the state of Delaware, as alleged herein.

7. Raytheon uses and offers to its customers its Raytheon system, including "VIRTSIM" (*See, e.g.*, <http://investor.raytheon.com/phoenix.zhtml?c=84193&p=irol-newsArticle&ID=1749291>), the virtual reality training tool and its immersive virtual reality environment, where participants and live performers can interact with each other and the environment via input and output devices for the performers and the participants. (*See* VIT's Claim Chart for claims 1-2 and 8-9 of the '599 patent, Ex. B at 1-13.)

8. As detailed in paragraphs 47-67 below, Raytheon offers its virtual reality system and practices a method for participants and performers to interact in an immersive virtual reality environment. (*Id.* at 1-13.) The Raytheon system includes one or more performer input and output devices in electronic communication with the virtual environment and one or more participant input and output devices, also in electronic communication with the virtual environment. (*Id.* at 3-5.)

9. The Raytheon system provides the virtual environment which includes a video image of one or more live performers with audio communication between the one or more live performers and one or more participants. (*Id.* at 5-6.)

10. In the Raytheon system, the one or more participants interact with the one or more live performers and the virtual environment resulting in an experience partially controlled by the one or more participants using an input device. (*Id.* at 6-7.)

11. Raytheon has derived substantial revenues from its infringing acts occurring within Delaware.

12. Raytheon is subject to the Court's general jurisdiction, including from regularly doing or soliciting business, engaging in other persistent courses of conduct, and deriving substantial revenue from goods and services provided to persons or entities in Delaware.

13. Raytheon provides content as well as virtual reality commercial services through its VIRTSIM virtual reality training tool.

14. Raytheon is subject to the Court's personal jurisdiction at least due to its sale of products or services within Delaware.

15. Raytheon has committed such purposeful acts or transactions in Delaware such that it reasonably should know and expect that it could be haled into court in this State as a consequence of such activities.

16. As detailed in paragraphs 47-67 below, Raytheon supports the creation and maintenance of an immersive virtual reality system which permits live performers and participants to interact with each other and the environment within the state and District of Delaware.

17. This Court has subject matter jurisdiction under 28 U.S.C. §§ 1331 and 1338(a).

18. Venue is proper in this district under 28 U.S.C. § 1400(b). Raytheon is incorporated in Delaware. Upon information and belief, from and within this District, Raytheon has committed at least a portion of the infringements at issue in this case.

19. For these reasons, personal jurisdiction exists and venue is proper in this Court under 28 U.S.C. § 1400(b).

COUNT I

PATENT INFRINGEMENT OF UNITED STATES PATENT NO. 6,409,599

20. Plaintiff incorporates the above paragraphs herein by reference.

21. On June 25, 2002, the United States Patent and Trademark Office duly and legally issued United States Patent No. 6,409,599 (“the ’599 patent”). The ’599 patent is titled “Interactive Virtual Reality Performance Theater Entertainment System.” The application leading to the ’599 patent was filed on July 19, 1999. A true and correct copy of the ’599 patent is attached hereto as Exhibit A and incorporated herein by reference.

22. Plaintiff Virtual Immersion Technologies LLC is the assignee of all right, title and interest in the ’599 patent, including all rights to enforce and prosecute actions for infringement and to collect damages for all relevant times against infringers of the ’599 patent, including for past damages.

23. The ’599 patent relates to a system in which participants interact with a computerized environment in addition to live and/or pre-recorded performers. (*See Ex. A at 1:20-23.*)¹ The ’599 patent describes and enables immersive interactive virtual reality computer

¹ Citations to patents in this Complaint refer to columns and lines within columns of any cited patent. For example, the citation referenced by this footnote refers to column 1, at lines 20 through 23, in the ’599 patent.

systems in which participants interact with a virtual reality environment and live performers using a variety of immersion and input devices.” (*Id.* at 1:23-26.)

24. The claims of the ‘599 patent are directed to tangible embodiments. Claim 1, for example, is a system claim which clearly requires a computer operating software and several input/output devices in electronic communication with an immersive virtual reality environment. (*Id.* at 16:6-22.) Claim 2, for example, expressly recites a processing device and a network connecting the processing device with at least some of the input/output devices. (*Id.* at 16:39-46.)

25. The claims of the ‘599 patent are directed at providing a unique computing solution that addresses a problem particular to computerized virtual reality systems—providing an immersive interactive virtual reality system in which there exists three-way communication among and between participants, live performers and the virtual reality environment. (*Id.* at 3:24-27.)

26. Providing an immersive interactive virtual reality system with three-way communication in the manner claimed in the ‘599 patent solved new challenges over the techniques and systems known in the art at the time. Thus the claims of the ‘599 patent contain inventive concepts, being both novel and unconventional, which are sufficient to render the ‘599 patent claims to be patent-eligible.

27. Prior to the priority date of the ‘599 patent, in systems, such as traditional virtual reality systems, figures or objects not controlled by participants moved autonomously or, if a participant had an opportunity to interact with such objects in the virtual reality environment, the objects were limited to computer generated images and not live performers. (*Id.* at 1:57-67.)

28. Groups of participants have been entertained by graphically enhanced performers on stage or television. However, these instances occurred through non-immersion mediums without the enhancements of immersion-type devices or methods. (*Id.* at 2:5-9.)

29. Early entertainment systems which allowed participants to interact with a host and an environment using some input device did not operate within an immersive virtual reality environment and therefore lacked its immersive effects and their impact on participants. (*Id.* at 2:40-47.)

30. The '599 patent overcame these disadvantages by, for example, describing and enabling a system and method for delivering information “which provides three-way immersive interactive communication amongst and between” participants, an immersive environment and live performers. (*Id.* at 2:55-57.)

31. The inventors of the claimed invention in the '599 patent changed the focus from an interaction between individual participants and computer generated graphical objects within a virtual reality environment to a three-way communication amongst and between participants, live or pre-recorded performers, and an immersive virtual reality environment. (*Id.* at 3:11-17.) The inclusion of three-way communication results in a synergistic effect which creates an unparalleled experience. (*Id.* at 3:18-22.)

32. Furthermore, the claimed invention of the '599 patent represents an intrinsic improvement to the underlying computer technology involved. The claimed system includes a variety of audio and video components. (*See, e.g.*, claim 1 of the '599 patent.) The variety of audio and video components enable innovative mixing and switching techniques which allows the system to present to each of the participants a virtual reality environment in which a live representation of the performers is superimposed within the environment. (*Id.* at 4:5-9.) The

participants are able to view and interact with a novel display of both graphical data and live representations for an exciting experience. (*Id.* at 4:9-12.)

33. The inventors of the '599 patent took considerable personal risks to nurture and prove out the technology systems described in the '599 patent, contributing substantially to today's virtual reality industry explosion.

34. The inventors of the '599 patent have utilized the technology described by the '599 patent for more than ten years, shipping virtual reality systems to five continents and entertaining or educating an estimated 30 million people worldwide with their immersive virtual reality live theater attractions and promotions.

35. The virtual reality theater technology created by the inventors has been recognized and awarded on an international scale, the products winning "Best New Product" and "Best of Show" at the International Association of Amusement Parks and Attractions global convention in Atlanta in November 2000, and again for 'Best of Show' in 2002 in Orlando, as well as national awards for graphics and creativity in the Print Media industry. The products and concepts have garnered dozens of feature articles in news media promoting clients and their products in a variety of industries.

36. The inventors of the '599 patent continue to have a direct interest in activities related to the '599 patent, working closely with Plaintiff to identify and evaluate entities making use of the technology claimed by the '599 patent without permission or license thereto.

37. The inventions of the '599 patent resolve technical problems related to virtualized interactive technology. For example, the inventions allow parties to interact in a virtual environment in real time with one or more live performers and participants which, on information and belief, is exclusively implemented using computer technology.

38. The claims of the '599 patent do not merely recite the performance of some method known from the pre-Internet world along with the requirement to perform it on the Internet. Instead, the claims of the '599 patent recite inventive concepts that are rooted in computerized virtual reality technology, and overcome problems specifically arising in the realm of computerized virtual reality technologies.

39. The claims of the '599 patent recite an invention that is not merely the routine or conventional use of computerized communication technology. Instead, the invention makes it possible to interact with one or more live performers and/or participants in a virtualized environment which does not require the physical presence of either the one or more performers or participants in order for such interactions to take place. The '599 patent claims thus specify how communication input, output, and system devices are manipulated to yield a virtual, interactive experience controlled in part by one or more participants.

40. The technology claimed in the '599 patent does not preempt all ways of using interactive communications technology, nor preempt the use of any well-known communications technology, nor preempt any other well-known or prior art technology.

41. The '599 patent claims are not directed to any “method of organizing human activity,” “fundamental economic practice long prevalent in our system of commerce,” nor are any of the claims “a building block of the modern economy.”

42. The '599 patent does not take a well-known or established business method or process and “apply it to a general purpose computer.” Instead, the specific systems and processes described in the '599 patent have no direct corollary to a process that predates the advent of the Internet.

43. The '599 patent claims are directed toward a solution rooted in computer technology and uses technology, unique to computers and networks, to overcome a problem specifically arising in the realm of computerized virtual reality technologies.

44. The '599 patent claims are not directed at a mere mathematical relationship or formula.

45. The '599 patent claims cannot be performed by a human, in the human mind, or by pen and paper.

46. Accordingly, each claim of the '599 patent recites a combination of elements sufficient to ensure that the claim in practice amounts to significantly more than a patent on an ineligible concept.

47. Upon information and belief, Raytheon directly infringes and continues to directly infringe at least claims 1, 2, 8 and 9 of the '599 patent, in the State of Delaware and elsewhere in the United States, under 35 U.S.C. § 271(a) by making, using, selling, offering to sell, importing and/or providing and causing to be used an interactive, real time, virtual reality system, including Defendant's VIRTSIM virtual reality training tool along with related systems and software for access and use of such services (the "Accused Instrumentalities") as in claims 1, 2, 8 and 9 of the '599 patent. (*See* VIT's Claim Chart for claims 1, 2, 8 and 9 of the '599 patent, Ex. B at 1-13.)

48. In particular, claim 1 of the '599 patent generally recites a virtual reality system for one or more performers and participants comprising an immersive virtual reality environment, one or more performer input and output devices in electronic communication with the virtual environment, one or more participant input and output devices in electronic communication with the virtual environment, wherein the virtual environment includes a video image of one or more live performers with audio communication between one or more live

performers and one or more participants, wherein one or more participants interacts with one or more live performers and the virtual environment resulting in an experience partially controlled by one or more participants using an input device. (*Id.* at 1-7.)

49. Raytheon provides a virtual reality system via its VIRTSIM training tool, for participants and performers, and includes an immersive reality environment. (*Id.* at 1-3.)

50. The Raytheon system also includes one or more performer input and output devices in electronic communication with the virtual environment and one or more participant input and output devices, also in electronic communication with the virtual environment. (*Id.* at 3-5.)

51. The Raytheon system provides the virtual environment which includes a live or prerecorded image of one or more live performers with audio communication between the one or more live performers and one or more participants. (*Id.* at 5-6.)

52. In the Raytheon system, the one or more participants interact with the one or more live performers and the virtual environment resulting in an experience partially controlled by the one or more participants using an input device. (*Id.* at 6-7.)

53. Claim 2 of the '599 patent generally recites the system of claim 1 wherein the immersive virtual reality environment comprises a processing device, system data, output data and a network which connects the processing device, performer and participant input and output devices in electronic communication, thereby transmitting the system and output data to the live performer and participant.

54. In the Raytheon system, the virtual reality environment includes a processing device, system data, output data and a network which connects the processing device, performer

and participant input and output devices in electronic communication, thereby transmitting the system and output data to the live performer and participant. (*Id.* at 7-10.)

55. Claim 8 of the '599 patent generally recites a system which interacts with participants and performers comprising an immersive virtual reality environment, said environment further comprising a processing device, system data, output data and a network; participant and performer input and output devices in electronic communication with the immersive virtual reality environment; wherein at least one participant interacts with at least one live performer and the immersive virtual reality environment resulting in an experience in part controlled by the participant and participant input device; the network connecting the processing, performer and participant input and output devices in electronic communication, thereby transmitting the system and output data to the live performer and participant; and the network connecting the immersive virtual reality environment and participant input and output devices across the Internet.

56. In the Raytheon system, the virtual reality environment includes an immersive virtual reality environment, said environment further comprising a processing device, system data, output data and a network; participant and performer input and output devices in electronic communication with the immersive virtual reality environment; wherein at least one participant interacts with at least one live performer and the immersive virtual reality environment resulting in an experience in part controlled by the participant and participant input device; the network connecting the processing, performer and participant input and output devices in electronic communication, thereby transmitting the system and output data to the live performer and participant; and the network connecting the immersive virtual reality environment and participant input and output devices across the Internet. (*Id.* at 10-12.)

57. Claim 9 of the '599 patent generally recites a method of providing interactive communications between participants and performers comprising the steps of providing an immersive virtual reality environment; providing performer and participant input and output devices in communication with the immersive virtual reality environment; having the live performer interact with the participant and immersive virtual reality environment by including a live or prerecorded image of the live performer and audio communication between the live performer and the participant or between the participant and live performer or both; having the participant interact with the live performer producing an experience controlled by the participant and participant input device.

58. Raytheon provides a method of providing interactive communications between participants and performers, the method including the steps of providing an immersive virtual reality environment; providing performer and participant input and output devices in communication with the immersive virtual reality environment; having the live performer interact with the participant and immersive virtual reality environment by including a live or prerecorded image of the live performer and audio communication between the live performer and the participant or between the participant and live performer or both; having the participant interact with the live performer producing an experience controlled by the participant and participant input device. (*Id.* at 12-13.)

59. The Raytheon system offers a service to users (that are using a computing device) in Delaware to interact with an immersive virtual reality environment via the VIRTSIM training tool well as with participants and performers as recited in claim 1 of the '599 patent.

60. Users in Delaware have used and interacted with the Raytheon system as recited in claim 1 of the '599 patent.

61. Upon information and belief, since at least the time it received notice by this Complaint, Raytheon has induced and continues to induce others to infringe claims of the '599 patent under 35 U.S.C. § 271(b) by, among other things, and with specific intent or willful blindness, actively aiding and abetting others to infringe, including but not limited to Raytheon's partners and customers, whose use of the Accused Instrumentalities constitutes direct infringement of claims of the '599 patent.

62. In particular, Raytheon's actions that aid and abet others such as their partners and customers to infringe include advertising and distributing the Accused Instrumentalities and providing instruction materials, training, and services regarding the Accused Instrumentalities. Upon information and belief, Raytheon has engaged in such actions with specific intent to cause infringement or with willful blindness to the resulting infringement because Raytheon has had actual knowledge of the '599 patent and that its acts were inducing the infringement of the '599 patent since at least the date Raytheon received notice by this Complaint that such activities infringed the '599 patent.

63. Use of the Accused Instrumentalities by Raytheon's partners, customers, and/or end users infringes each of claims 1, 2, 8 and 9 of the '599 patent through a combination of features which collectively practice each limitation of the claims. (*See, e.g.*, <http://investor.raytheon.com/phoenix.zhtml?c=84193&p=irol-newsArticle&ID=1749291>; https://www.youtube.com/watch?v=Bzp8_CZwX4M; <https://www.fastcompany.com/3000383/virtual-training-world-law-enforcement-inflicts-real-pain>; <http://raytheon.mediaroom.com/2015-09-23-Raytheon-wins-prestigious-Brandon-Hall-award-for-Patriot-missile-battery-virtual-training>; <http://investor.raytheon.com/phoenix.zhtml?c=84193&p=irol-newsArticle&ID=1401584>; :

<http://www.manufacturing-today.com/images/pdfs/raytheon.pdf>;
<http://investor.raytheon.com/phoenix.zhtml?c=84193&p=irol-newsArticle&ID=1607198>;
https://tucson.com/business/tucson/fly-into-a-missile-raytheon-embraces-virtual-reality/article_6812b223-d68d-5346-8e5c-60a23c217092.html;
<http://fortune.com/2015/12/16/army-training-with-vr/>;
<https://www.werehemighty.com/articles/military-video-games-2>;
https://www.raytheon.com/capabilities/rtnwcm/groups/ncs/documents/content/rtn_ncs_business_q22012_pdf.pdf; https://www.youtube.com/watch?v=Bzp8_CZwX4M;
<https://www.roadtovr.com/virtsim-virtual-reality-platform/>; <https://ispr.info/2012/07/09/virtsim-the-next-innovation-in-tactical-police-and-military-training/>;
<https://www.youtube.com/watch?v=Zx0eoUVzyXE&feature=youtu.be&t=26>;
<https://www.geospatialworld.net/article/simulators-for-combat-mission-rehearsals/>;
<http://fortune.com/2015/12/16/army-training-with-vr/>;
<http://investor.raytheon.com/phoenix.zhtml?c=84193&p=irol-newsArticle&ID=1749291>;
https://www.raytheon.com/capabilities/rtnwcm/groups/ncs/documents/content/rtn_ncs_business_q22012_pdf.pdf; <http://www.motionreality.com/virtsim-military>;
<https://ispr.info/2012/07/09/virtsim-the-next-innovation-in-tactical-police-and-military-training/>;
https://tucson.com/business/tucson/fly-into-a-missile-raytheon-embraces-virtual-reality/article_6812b223-d68d-5346-8e5c-60a23c217092.html.)

64. Upon information and belief, these Accused Instrumentalities are used marketed, provided to, and/or used by or for each of Defendant's partners, clients, customers and end users across the country and in this District.

65. Upon information and belief, since at least the time Defendant received notice, Defendant has induced and continues to induce others to infringe the claims of the '599 patent under 35 U.S.C. § 271(b) by, among other things, and with specific intent or willful blindness, actively aiding and abetting others to infringe, including but not limited to each of Defendant's partners, clients, customers, and end users, whose use of the Accused Instrumentalities constitutes direct infringement of the claims of the '599 patent.

66. In particular, Defendant's actions that aid and abet others such as its partners, customers, clients, and end users to infringe include advertising and distributing the Accused Instrumentalities and providing instruction materials, training, and services regarding the Accused Instrumentalities. Upon information and belief, Defendant has engaged in such actions with specific intent to cause infringement or with willful blindness to the resulting infringement because Defendant has had actual knowledge of the '599 patent and knowledge that its acts were inducing infringement of the '599 patent since at least the date Defendant received notice that such activities infringed the '599 patent.

67. Upon information and belief, Defendant is liable as a contributory infringer of the '599 patent under 35 U.S.C. § 271(c) by offering to sell, selling and importing into the United States software, devices and supporting infrastructure for the VIRTSIM training tool, especially made or adapted for use in an infringement of the '599 patent. The Accused Instrumentalities are a material component for use in practicing the '599 patent and are specifically made and are not a staple article of commerce suitable for substantial non-infringing use.

68. Defendant was made aware of the '599 patent and its infringement thereof at least as early as the filing of this Complaint. Despite Plaintiff's notice to Raytheon by this Complaint regarding the '599 patent, Raytheon continues to infringe the '599 patent.

69. Upon information and belief, since at least the time it received notice by this Complaint, Raytheon's infringement has been and continues to be willful.

70. Plaintiff VIT has been harmed by each of Raytheon's infringing activities with respect to the '599 patent.

71. VIT reserves the right to modify its infringement theories as discovery progresses in this case. It shall not be estopped for purposes of its infringement contentions or its claim constructions by the claim charts it provides with this Complaint. VIT intends the claim chart (Exhibit B) for the '599 patent to satisfy the notice requirements of Rule 8(a)(2) of the Federal Rule of Civil Procedure. The claim chart is not VIT's preliminary or final infringement contentions or preliminary or final claim construction positions.

JURY DEMAND

Pursuant to Rule 38 of the Federal Rules of Civil Procedure, Plaintiff demands a trial by jury on all issues triable as such.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff demands judgment for itself and against Defendant as follows:

- A. An adjudication that Defendant has infringed the '599 patent;
- B. An award of damages to be paid by Defendant adequate to compensate Plaintiff for Defendant's past infringement of the '599 patent, and any continuing or future infringement through the date such judgment is entered, including interest, costs, expenses and an accounting of all infringing acts including, but not limited to, those acts not presented at trial;
- C. A declaration that this case is exceptional under 35 U.S.C. § 285, and an award of Plaintiff's reasonable attorneys' fees; and
- D. An award to Plaintiff of such further relief at law or in equity as the Court deems just and proper.

Dated: August 30, 2018

DEVLIN LAW FIRM LLC

/s/ Timothy Devlin

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