

**UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

RAH COLOR TECHNOLOGIES LLC,

Plaintiff,

v.

MICROSOFT CORPORATION,

Defendant.

Case No. 2:20-cv-88

COMPLAINT FOR PATENT
INFRINGEMENT; JURY TRIAL
DEMANDED

COMPLAINT

This is an action for patent infringement arising under the patent laws of the United States, Title 35 of the United States Code, against Defendant Microsoft Corporation (“Microsoft”) that relates to five U.S. patents owned by RAH Color Technologies LLC (“RAHCT”): U.S. Patent Nos. 7,729,008 (the ’008 Patent); 6,995,870 (the ’870 Patent); 7,312,897 (the ’897 Patent); 9,404,802 (the ’802 Patent); and 9,516,288 (the ’288 Patent) (collectively, the “Patents-in-Suit”).

On December 6, 2018, the United States Judicial Panel on Multidistrict Litigation issued a decision ordering the following other cases involving RAH Color Technologies’ patents to be transferred to the Northern District of California and assigned to the Honorable Susan Yvonne Illston for coordinated and/or consolidated pretrial proceedings:

RAH Color Technologies LLC v. Adobe Systems, Inc.,

RAH Color Technologies LLC v. Xerox Corporation, and

Electronics For Imaging, Inc. v. RAH Color Technologies LLC.

On January 25, 2019, the United States Judicial Panel on Multidistrict Litigation issued orders finalizing the conditional transfer of the following cases to the consolidated MDL:

RAH Color Technologies LLC v. Heidelberger Druckmaschinen AG, and

RAH Color Technologies LLC v. Dalim Software GmbH.

On February 21, 2019, the United States Judicial Panel on Multidistrict Litigation issued an order finalizing the conditional transfer of the case *RAH Color Technologies LLC v. Eastman Kodak Co.* to the consolidated MDL.

The case against Kodak was subsequently dismissed on May 16, 2019 by agreement of the parties (RAH Color Technologies and Kodak). The case against Heidelberg was subsequently dismissed on July 23, 2019 by agreement of the parties (RAH Color Technologies and Heidelberg). The case against Xerox was subsequently dismissed on October 15, 2019 by agreement of the parties (RAH Color Technologies and Xerox).

The MDL that includes the above cases is titled *In Re: RAH Color Technologies LLC Patent Litigation*, N.D. Cal. case no. 18-md-02874.

On February 1, 2019, Adobe filed for *inter partes* review against four RAH Color Technologies patents: 7,729,008 (IPR2019-00627); 8,416,444 (IPR2019-00628); 7,312,897 (IPR2019-00629); and 7,791,761 (IPR2019-00646). IPR2019-00627 and -00628 were instituted on August 20, 2019; IPR2019-00629 and -00646 were instituted on September 4, 2019. On September 10, 2019, Judge Illston granted a motion to stay the MDL proceedings in light of the IPR institutions as to the remaining cases (Adobe, Dalim, EFI).

RAH Color Technologies believes this case with Microsoft is a tag-along action that should also be included in the coordinated and consolidated pre-trial MDL proceedings under the MDL Panel's Rule 7.1.

THE PARTIES

1. Plaintiff RAH Color Technologies is a limited liability company organized under the laws of the Commonwealth of Virginia. RAH Color Technologies maintains an office at 7012 Colgate Drive, Alexandria, Virginia 22307. RAH Color Technologies owns numerous United States patents generally related to the field of color management. Dr. Richard A. Holub manages RAH Color Technologies and is a named inventor of the Patents-in-Suit.

2. Defendant Microsoft is a company duly organized and existing under the laws of the State of Washington, with its principal place of business at One Microsoft Way, Redmond, WA 98052. On information and belief, Microsoft can be served with process at that address.

3. Defendant Microsoft makes, uses, sells, imports, and offers for sale hardware and software that employs color management in the U.S.

JURISDICTION AND VENUE

4. This Complaint states causes of action for patent infringement arising under the patent laws of the United States, 35 U.S.C. § 100 *et seq.*, and, more particularly 35 U.S.C. § 271.

5. This Court has subject matter jurisdiction of this action under 28 U.S.C. §§ 1331 and 1338(a) in which the district courts have original and exclusive jurisdiction of any civil action for patent infringement.

6. Microsoft is subject to this Court's personal jurisdiction pursuant to due process and/or the Texas Long Arm Statute, Tex. Civ. Prac. Rem. Code § 17.042, due at least to its substantial business conducted in this District, including: (i) having solicited business in the State of Texas, transacted business within the State of Texas and attempted to derive financial benefit from residents of the State of Texas in this District, including benefits directly related to the instant patent infringement causes of action set forth herein; (ii) having placed its products and

services into the stream of commerce throughout the United States and having been actively engaged in transacting business in Texas and in this District, and (iii) having committed the complained of tortious acts in Texas and in this District.

7. Microsoft, directly and/or through subsidiaries and agents (including distributors, retailers, and others), makes, imports, ships, distributes, offers for sale, sells, uses, and advertises (including offering products and services through its websites, for example <https://www.microsoft.com/en-us/>, as well as through other retailers) its products and/or services in the United States, the State of Texas, and the Eastern District of Texas.

8. Microsoft, directly and/or through its subsidiaries and agents (including distributors, retailers, and others), has purposefully and voluntarily placed one or more of its infringing products and/or services, as described below, into the stream of commerce with the expectation that they will be purchased and used by consumers in the Eastern District of Texas in an infringing manner. These infringing products and/or services have been and continue to be purchased and used by consumers in the Eastern District of Texas. Microsoft has committed acts of patent infringement within the State of Texas and, more particularly, within the Eastern District of Texas.

9. Microsoft also maintains a regular and established place of business in Texas and in this District, including its retail Microsoft Store at 2601 Preston Road, Ste. 1176, Frisco, TX 75034.

10. This Court's exercise of personal jurisdiction over Microsoft is consistent with Texas Long Arm Statute, Tex. Civ. Prac. Rem. Code § 17.042, and traditional notions of fair play and substantial justice.

11. Venue is proper in this District under 28 U.S.C. §§1391(b) and (c) because Defendant is subject to personal jurisdiction in this District, and under 28 U.S.C § 1400(b) because Defendant has committed acts of infringement in this District and Defendant maintains a regular and established place of business in this District.

BACKGROUND FACTS REGARDING RAH COLOR TECHNOLOGIES

12. RAH Color Technologies is owned by Dr. Richard A. Holub, who is a named inventor of all its patent assets. Dr. Holub holds a Ph.D. in Neurophysiology and has studied and worked extensively in the fields of vision and color reproduction for nearly fifty years.

13. For example, between 1983 and 1994, Dr. Holub worked for several leading companies including Eastman Kodak (following its acquisition of Eikonix Corp., which Dr. Holub joined in 1983), Agfa/Bayer and SuperMac Technologies where he served as Chief Color Scientist, Technology Consultant, and Principal Engineer, respectively, and had responsibility for developing and/or managing development of color technologies for new products.

14. Dr. Holub has additionally been a leader in development, research, and education in the graphic arts industry.

15. For example, for ten consecutive years beginning in 1993-94, Dr. Holub was elected to and served on the Board of Directors of The Technical Association of the Graphic Arts (“TAGA”), now a part of the Printing Industries of America. For nine of those ten years, Dr. Holub was an officer, serving three years as Technical Vice President and Papers Chair, two years as Executive Vice President, two years as President and two years as Immediate Past President. During his three years as Technical VP, Dr. Holub organized four technical conferences, including TAGA’s first-ever international conference, and, in addition, TAGA’s

contributions to the Graphic Arts Show Company's "Concepts" Conference in two successive years.

16. Between 1995 and 1998, Dr. Holub taught in various instructional programs at Rochester Institute of Technology, especially taking responsibility for research methods courses offered to Master's students pursuing the technology concentration in the School of Printing Management and Sciences (subsequently renamed the School of Print Media). During that time he served on thesis committees for a number of students in the Master's program. Many graduates of that program hold significant positions in the publishing and printing industries. In addition, during the early 1990's, Dr. Holub served as a key technical contributor to early standards developed by CGATS, the Committee for Graphic Arts Technical Standards.

17. Spanning almost two decades, Dr. Holub's R&D work (alone and with collaborators) resulted in 11 papers presented to TAGA's Annual Technical Conference, all of which subsequently appeared in published Conference *Proceedings*. His research also resulted in the contribution of at least four (4) important papers to refereed journals, including the *Journal of Imaging Technology* and *Color Research and Application*, as well as contributions to symposia organized by The Society for Imaging Science and Technology (IS&T), the Society of Photo-Optical Instrumentation Engineers (SPIE), and the Institute of Electrical and Electronics Engineers (IEEE).

18. In 1994, Dr. Holub began work on a new business that would leverage inventive developments in color measurement, imaging system architecture, user-interface and color reproduction technologies to implement open and accurate color reproduction in a networked environment. Over the next several years, Dr. Holub rented laboratory/demo space from RIT Research Corp., hired students from the Rochester Institute of Technology as well as software

and hardware contractors to assist him in developing a first product prototype. The prototype combined instrumentation for fully automatic display calibration with software support for highly accurate soft-proofing. During this time, he also prepared and filed the first two in a series of significant patent disclosures to cover implementations of inventive concepts.

19. Dr. Holub formed Imagicolor Corporation in 1998 to commercialize his prototype described above in paragraph 18. Further efforts at business development continued, however, investment did not materialize and Imagicolor was eventually dissolved.

20. Though commercialization of the prototype did not come to fruition, Dr. Holub continued to innovate, and pursue patents on those innovations, with the United States Patent Office. In 2005, RAH Color Technologies LLC was formed as a vehicle for an on-going licensing program for companies whose products depend on Dr. Holub's innovations.

BACKGROUND FACTS REGARDING THE RAH COLOR TECHNOLOGIES PATENT PORTFOLIO

21. The United States Patent Office has awarded Dr. Holub 36 patents to date, including the following Patents-in-Suit:

- United States Patent No. 6,995,870, entitled "System for Distributing and Controlling Color Reproduction at Multiple Sites" (the '870 Patent);
- United States Patent No. 7,312,897, entitled "System for Distributing and Controlling Color Reproduction at Multiple Sites" (the '897 Patent);
- United States Patent No. 7,729,008, entitled "System for Distributing and Controlling Color Reproduction at Multiple Sites" (the '008 Patent);
- United States Patent No. 9,404,802, entitled "System for Distributing and Controlling Color Reproduction at Multiple Sites" (the '802 Patent); and
- United States Patent No. 9,516,288, entitled "Color Calibration of Color Image Rendering Devices" (the '288 Patent)

22. The United States Patent Office has considered over 500 references during the prosecution of Dr. Holub's patent applications.

23. Hundreds of subsequently filed patent applications by third parties have cited to Dr. Holub's patents.

24. RAH Color Technologies has licensed the technology covered by its patents to seventeen multinational manufacturers of imaging equipment (including digital cameras, color video displays, color printers and presses, and color measurement instruments) and providers of software and services (including imaging workflow, color management, printing and photographic services, and consulting, process outsourcing and training), many of which were resolved without the need for litigation. Additionally, thirteen major companies have entered into end-user license agreements with RAH Color Technologies, all without litigation.

25. These industry-leading companies have each recognized the contributions Dr. Holub has made to the fields of color management, remote proofing, and measurement and control of color product quality.

26. All right, title, and interest in the Patents-in-Suit are held by RAH Color Technologies.

MICROSOFT'S AWARENESS OF THE PATENTS-IN-SUIT

27. In approximately mid-January 2009, counsel for RAH Color Technologies (David Berten, then of Competition Law Group; hereafter "CLG") contacted David Lubitz and Tracy Burns of Microsoft regarding the RAH Color Technologies patent portfolio. Shortly thereafter, on January 16, 2009, RAH Color Technologies and Microsoft entered into a nondisclosure agreement (now expired) to discuss the acquisition of RAH Color Technologies' patent portfolio. These discussions did not result in an agreement.

28. On April 23, 2015, counsel for RAH Color Technologies (Global IP Law Group LLC; hereafter “Global IP”) contacted Carl Brandt and Geoffrey Hoggard of Microsoft, identifying the ’870, ’897, and ’008 Patents as being infringed by Microsoft products, and offering Microsoft a license to the patent portfolio.

29. Mr. Hoggard responded, and forwarded the information and materials to Jim Ross of Microsoft. Global IP then sent an email to Mr. Ross to follow up on December 10, 2015, informing Microsoft of additional licensees to the portfolio. Microsoft did not respond.

30. On February 15, 2016, Global IP again emailed Mr. Ross, and included claim charts for the ’870 and ’897 Patents. Microsoft did not respond.

31. On March 21, 2016, Global IP again emailed Mr. Ross seeking to discuss the patent portfolio, and informing Microsoft of an additional licensee to the portfolio. Mr. Ross responded on March 22, 2016, indicating availability for a phone call. The parties discussed the RAH Color Technologies on March 31, 2016. Microsoft indicated that it was reviewing the portfolio and claim charts, and requested that Global IP follow up in a few weeks.

32. On May 10, 2016, Global IP sent an email to Mr. Ross as follow up to the March 31, 2016 phone call. Microsoft did not respond.

33. On June 14, 2016, Global IP again sent an email to Mr. Ross seeking an update. Mr. Ross responded on June 20, 2016, and indicated that a phone call on July 6, 2016 would be possible. Global IP confirmed its availability on July 6, 2016, but the call did not occur. Global IP then contacted Mr. Ross on July 8, 2016, again seeking dialogue. The parties discussed this matter subsequently, but no agreement was reached.

34. On February 9, 2017, Global IP emailed Mr. Ross, informing Microsoft of the conclusion of litigation with Ricoh, and the filing of an additional complaint against R.R.

Donnelley. Microsoft responded over a month later on March 23, 2017, with the position that Microsoft considered the matter closed based on vague positions of non-infringement and invalidity. Microsoft did not provide any specifics.

35. On December 11, 2018, Global IP contacted Steven Fricke of Microsoft by email to provide an update on the RAH Color Technologies matter, and inquiring if Microsoft had interest in re-opening discussions in light of additional litigation against unlicensed parties (including Microsoft) planned for the near future. Mr. Fricke informed Global IP of the correct contact person handling such matters, Kevin Kehoe of Microsoft.

36. On December 14, 2018, Global IP emailed Mr. Kehoe to follow up. Mr. Kehoe indicated that Isabella Fu of Microsoft would be handling the RAH Color Technologies matter. Ms. Fu emailed Global IP the same day, and suggested a phone conversation. The parties spoke on December 17, 2018, and the parties agreed to review their records concerning discussions of the patent portfolio, including discussion of claim charts and any prior art.

37. The same day, Global IP sent a follow up email to Microsoft, outlining previous discussions, and attached claim charts previously sent to Mr. Ross on February 15, 2016. Microsoft responded on January 9, 2019 with a summary of Microsoft's discussions on non-infringement and invalidity, and indicating Microsoft would be open to further discussions.

38. On January 17, 2019, Global IP responded to Ms. Fu's January 9, 2019 email, indicating that Microsoft never provided specific information related to its non-infringement and invalidity positions. The email also included claim charts against all the Patents-in-Suit.

39. On January 18, 2019, Microsoft responded that it would need time to review the additional claim charts, and requesting information on priority and expiration dates for the Patents-in-Suit. Global IP provided this information on January 22, 2019.

40. The parties discussed the Patents-in-Suit subsequently, but no agreement was reached.

41. Despite knowledge of the Patents-in-Suit, Microsoft has continued to infringe and induce the infringement of the Patents-in-Suit.

42. Microsoft promotes its capabilities of advanced color management on its Windows platform, including on Microsoft’s own devices running Windows, that it sells, and offers for sale to customers in the United States.

43. Microsoft has in the past and continues to directly infringe the asserted claims of the Patents-in-Suit pursuant to 35 U.S.C. § 271 by using methods and using, making and importing systems, software, and apparatuses covered by the asserted patent claims identified below.

COUNT I: INFRINGEMENT OF U.S. PATENT ’870 CLAIM 34

44. RAH Color Technologies incorporates by reference the allegations set forth in paragraphs 1-43 of this Complaint as though set forth in full herein.

45. Claim 34 of the ’870 Patent provides:

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| Claim 34 Preamble | A method for providing control to a user for processing color images comprising the steps of: |
| Element A | providing an interface operable at a computer through which the user is able to select a plurality of sites having one or more color input or output devices; |
| Element B | communicating between said sites through a network interface at said sites; and |
| Element C | providing information for transforming input color image data into output color image data for the color input or output devices at said plurality of sites such that colors produced by the color devices appear substantially the same within colors attainable by each of the devices, wherein said information for transforming comprises information relating the color gamuts of different ones of said color devices to each other and user |

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| | preferences for color reproduction for at least one of the color devices. |
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46. “Microsoft Accused Products” include the Windows operating system and its Windows Color System (including its components and features, such as display calibration) available with all versions of Vista, Windows 7, Windows 8, and Windows 10, and other software and/or hardware that include the same or equivalent functionality as described in paragraphs 47-50 of Count I, paragraph 59 of Count II, paragraph 68 of Count III, paragraph 77 of Count IV, paragraph 87 of Count V, paragraphs 95-98 of Count VI, paragraph 106 of Count VII, and paragraph 114 of Count VIII.

47. Microsoft Accused Products provide control for processing color images through the Windows Color System (“WCS”) and its color management features. WCS is an integral component of the Windows operating system installed on computers since at least version 6 (“Windows Vista”). WCS includes two color management modules (“CMMs”): Color Infrastructure and Translation Engine (“CITE”) for processing WCS components, and a legacy ICM3 CMM (v.4 compliant) used for processing International Color Consortium (“ICC”) color profiles.

48. In Microsoft Accused Products, Windows displays a color management interface that includes listings of devices connected to Windows, including displays and printers. Connected devices such as printers communicate with Windows via a network connection (e.g., TCP/IP). Windows’ color management interface also provides user preferences for color management, including the selection of different types of gamut mappings and profiles for different rendering scenarios, as examples. Windows also includes preferences for color management such as black enhancement, which improves the gamut mapping of neutrals and enhances the dynamic range and contrast of printed output.

49. In Microsoft Accused Products, WCS utilizes various color components, including Device Profiles, Viewing Conditions Profiles, and Gamut Mapping Profiles (collectively “WCS Profiles”), all of which are used for building color transformations to ensure that colors match between different devices and sources. As an example, when printing digital color images encoded as sRGB values (e.g., from a digital camera), WCS Profiles are used in the transformation of sRGB values to CMYK values for a printer. To assist in the color management and matching process, Windows includes a Display Calibration Wizard for user-calibration of displays. This calibration ensures that the monitor displays colors as intended, and ensures that any colors (e.g., between image viewed on monitor and image as printed) are substantially the same, based on their rendering characteristics and capabilities.

50. The WCS Gamut Mapping Profiles define gamut mapping procedures used for generating color transformations by defining the algorithms that specify default gamut mapping operations for different color reproduction requirements (e.g., graphics and line art, photographic images). Upon information and belief, Gamut Mapping Profiles are used for preparing gamut boundary descriptions (“GBD”) for devices. GBDs are used in gamut mapping processes between different devices.

51. Microsoft directly infringes claim 34 of the ’870 Patent by using the Microsoft Accused Products, including in relation to product testing and improvement responsive to user feedback, and demonstration at trade shows, sales facilities, customer sites, and training/tutorial videos.

52. In addition, Microsoft induces infringement of claim 34 of the ’870 Patent by end users by importing and selling the Microsoft Accused Products that practice the claimed process in ordinary use.

53. Upon information and belief, Microsoft's customers (including developers and OEMs) and/or end users have directly infringed and are directly infringing each and every claim limitation of at least claim 34 of the '870 Patent. Microsoft actively induces customers and end-users to directly infringe each and every claim limitation of at least claim 34 of the '870 Patent under 35 U.S.C. § 271(b). Microsoft has had actual knowledge of the '870 Patent since at least April 23, 2015. Microsoft has been and is knowingly inducing its customers and/or end users to directly infringe at least claim 34 of the '870 Patent with the specific intent to encourage such infringement, and knowing that the acts induced constitute patent infringement. Microsoft's inducement includes, for example, providing extensive training and technical guides, software development kits, product data sheets, demonstrations, software and hardware specifications, installation guides, and other forms of support (e.g., maintenance contracts, consulting services, system integration) that induce its customers and/or end users to directly infringe at least claim 34 of the '870 Patent by using the Microsoft Accused Products.

54. Microsoft has had knowledge of the '870 Patent since at least April 23, 2015.

55. Microsoft makes, uses, offers to sell, sells, and/or imports the Microsoft Accused Products knowing that Microsoft has infringed and continues to infringe at least claim 34 of the '870 Patent under 35 U.S.C. § 271(a) directly.

56. As a direct and proximate result of Microsoft's acts of patent infringement, RAH Color Technologies has been and continues to be injured and has sustained, and will continue to sustain, damages.

COUNT II: INFRINGEMENT OF U.S. PATENT '870 CLAIM 37

57. RAH Color Technologies incorporates by reference the allegations set forth in paragraphs 1-56 of this Complaint as though set forth in full herein.

58. Claim 37 of the '870 patent provides:

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| Claim 37 | The method according to claim 34 wherein said information for transforming comprises at least a gamut operator that is reciprocal. |
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59. In Microsoft Accused Products, WCS implements gamut mapping operations that use gamut boundary descriptions, or GBDs, upon information and belief. These gamut mapping operations involve both the expansion and reciprocal compression of a source gamut to match that of the destination gamut. For example, WCS uses (and teaches the use) of “shear mapping” to match hue reference points between source and destination gamuts, followed by compression of the lightness dimension and chroma expansion of a source gamut to match the destination gamut. On information and belief, Microsoft default gamut mapping model profiles comprise such operations.

60. Microsoft directly infringes claim 37 of the '870 Patent by selling, offering to sell, and using the Microsoft Accused Products, including in relation to at least product testing and improvement responsive to user feedback, and training/tutorial videos.

61. In addition, Microsoft induces infringement of claim 37 of the '870 Patent by importing and selling the Microsoft Accused Products that practice the claimed process in ordinary use.

62. Upon information and belief, Microsoft's customers (including developers and OEMs) and/or end users have directly infringed and are directly infringing each and every claim limitation of at least claim 37 of the '870 Patent. Microsoft actively induces customers and end-users to directly infringe each and every claim limitation of at least claim 37 the '870 Patent under 35 U.S.C. § 271(b). Microsoft has had actual knowledge of the '870 Patent since at least April 23, 2015. Microsoft has been and is knowingly inducing its customers and/or end users to

directly infringe at least claim 37 of the '870 Patent with the specific intent to encourage such infringement, and knowing that the acts induced constitute patent infringement. Microsoft's inducement includes, for example, providing software useable only with computer systems, extensive training and technical guides, software development kits, product data sheets, demonstrations, software and hardware specifications, installation guides, and other forms of support that induce its customers and/or end users to directly infringe at least claim 37 of the '870 Patent by installing and using the Microsoft Accused Products on a computer system.

63. Microsoft has had knowledge of the '870 Patent since at least April 23, 2015.

64. Microsoft uses, offers to sell, and sells the Microsoft Accused Products knowing that Microsoft has infringed and continues to infringe at least claim 37 of the '870 Patent under 35 U.S.C. § 271(a) directly.

65. As a direct and proximate result of Microsoft's acts of patent infringement, RAH Color Technologies has been and continues to be injured and has sustained, and will continue to sustain, damages.

COUNT III: INFRINGEMENT OF U.S. PATENT '870 CLAIM 38

66. RAH Color Technologies incorporates by reference the allegations set forth in paragraphs 1-56 of this Complaint as though set forth in full herein.

67. Claim 38 of the '870 patent provides:

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| Claim 38 | The method according to claim 34 wherein said information for transforming comprises gamut operations that are invertible. |
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68. In Microsoft Accused Products, WCS implements gamut mapping operations that use gamut boundary descriptions, or GBDs, upon information and belief. These gamut mapping operations involve the alignment of the neutral axes of source and destination gamuts, with the alignment accomplished by adjusting chroma levels for the source gamut along a plane of

constant lightness (perpendicular to the plane in which chroma is defined). Once the source and destination gamuts are aligned along their neutral axes, gamut mapping is performed. Next, the chroma adjustments are inverted before further processing occurs for the destination gamut and device.

69. Microsoft directly infringes claim 38 of the '870 Patent by selling, offering to sell, and using the Microsoft Accused Products, including in relation to at least product testing and improvement responsive to user feedback, and training/tutorial videos.

70. In addition, Microsoft induces infringement of claim 38 of the '870 Patent by importing and selling the Microsoft Accused Products that practice the claimed process in ordinary use.

71. Upon information and belief, Microsoft's customers (including developers and OEMs) and/or end users have directly infringed and are directly infringing each and every claim limitation of at least claim 38 of the '870 Patent. Microsoft actively induces customers and end-users to directly infringe each and every claim limitation of at least claim 38 the '870 Patent under 35 U.S.C. § 271(b). Microsoft has had actual knowledge of the '870 Patent since at least April 23, 2015. Microsoft has been and is knowingly inducing its customers and/or end users to directly infringe at least claim 38 of the '870 Patent with the specific intent to encourage such infringement, and knowing that the acts induced constitute patent infringement. Microsoft's inducement includes, for example, providing software useable only with computer systems, extensive training and technical guides, software development kits, product data sheets, demonstrations, software and hardware specifications, installation guides, and other forms of support that induce its customers and/or end users to directly infringe at least claim 38 of the '870 Patent by installing and using the Microsoft Accused Products on a computer system.

72. Microsoft has had knowledge of the '870 Patent since at least April 23, 2015.

73. Microsoft uses, offers to sell, and sells the Microsoft Accused Products knowing that Microsoft has infringed and continues to infringe at least claim 38 of the '870 Patent under 35 U.S.C. § 271(a) directly.

74. As a direct and proximate result of Microsoft's acts of patent infringement, RAH Color Technologies has been and continues to be injured and has sustained, and will continue to sustain, damages.

COUNT IV: INFRINGEMENT OF U.S. PATENT '870 CLAIM 40

75. RAH Color Technologies incorporates by reference the allegations set forth in paragraphs 1-56 of this Complaint as though set forth in full herein.

76. Claim 40 of the '870 patent provides:

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| Claim 40 | The method according to claim 34 wherein said user preferences for color reproduction include selection of gamut scaling operations. |
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77. In Microsoft Accused Products, WCS implements gamut mapping operations that use gamut boundary descriptions, or GBDs, upon information and belief. Users can select which gamut mapping model to employ for a given color reproduction (e.g., for charts and graphs, photography, proofing and line art). These gamut mapping operations entail gamut scaling (e.g., alignment of neutral axes of source and destination gamuts, compression of lightness, expansion of chroma). In addition to providing default Gamut-Mapping Model Profiles that embody gamut scaling operations, Microsoft enables developers and OEMs to customize such Profiles for their applications, on information and belief.

78. Microsoft directly infringes claim 40 of the '870 Patent by selling, offering to sell, and using the Microsoft Accused Products, including in relation to at least product testing and improvement responsive to user feedback, and training/tutorial videos.

79. In addition, Microsoft induces infringement of claim 40 of the '870 Patent by importing and selling the Microsoft Accused Products that practice the claimed process in ordinary use.

80. Upon information and belief, Microsoft's customers (including developers and OEMs) and/or end users have directly infringed and are directly infringing each and every claim limitation of at least claim 40 of the '870 Patent. Microsoft actively induces customers and end-users to directly infringe each and every claim limitation of at least claim 40 of the '870 Patent under 35 U.S.C. § 271(b). Microsoft has had actual knowledge of the '870 Patent since at least April 23, 2015. Microsoft has been and is knowingly inducing its customers and/or end users to directly infringe at least claim 40 of the '870 Patent with the specific intent to encourage such infringement, and knowing that the acts induced constitute patent infringement. Microsoft's inducement includes, for example, providing software useable only with computer systems, extensive training and technical guides, software development kits, product data sheets, demonstrations, software and hardware specifications, installation guides, and other forms of support that induce its customers and/or end users to directly infringe at least claim 40 of the '870 Patent by installing and using the Microsoft Accused Products on a computer system.

81. Microsoft has had knowledge of the '870 Patent since at least April 23, 2015.

82. Microsoft uses, offers to sell, and sells the Microsoft Accused Products knowing that Microsoft has infringed and continues to infringe at least claim 40 of the '870 Patent under 35 U.S.C. § 271(a) directly.

83. As a direct and proximate result of Microsoft’s acts of patent infringement, RAH Color Technologies has been and continues to be injured and has sustained, and will continue to sustain, damages.

COUNT V: INFRINGEMENT OF U.S. PATENT ’870 CLAIM 42

84. RAH Color Technologies incorporates by reference the allegations set forth in paragraphs 1-56 of this Complaint as though set forth in full herein.

85. Claim 42 of the ’870 patent provides:

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| Claim 42 | The method according to claim 34 wherein at least two of said sites capable of being remote from each other. |
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86. In Microsoft Accused Products, WCS utilizes various color components, including Device Profiles, Viewing Conditions Profiles, and Gamut Mapping Profiles (collectively “WCS Profiles”), all of which are used for building color transformations to ensure that colors match between different devices and sources. As an example, when printing digital color images encoded as sRGB values (e.g., from a digital camera), WCS Profiles are used in the transformation of sRGB values to CMYK values for a printer. To assist in the color management and matching process, Windows includes a Display Calibration Wizard for user-calibration of displays. This calibration ensures that the monitor displays colors as intended, and ensures that any colors match (e.g., between image viewed on monitor and image as printed), regardless of location (e.g., if printer is not within physical proximity of computer).

87. Microsoft directly infringes claim 42 of the ’870 Patent by selling, offering to sell, and using the Microsoft Accused Products, including in relation to at least product testing and improvement responsive to user feedback, and training/tutorial videos.

88. In addition, Microsoft induces infringement of claim 42 of the '870 Patent by importing and selling the Microsoft Accused Products that practice the claimed process in ordinary use.

89. Upon information and belief, Microsoft's customers (including developers and OEMs) and/or end users have directly infringed and are directly infringing each and every claim limitation of at least claim 42 of the '870 Patent. Microsoft actively induces customers and end-users to directly infringe each and every claim limitation of at least claim 42 the '870 Patent under 35 U.S.C. § 271(b). Microsoft has had actual knowledge of the '870 Patent since at least April 23, 2015. Microsoft has been and is knowingly inducing its customers and/or end users to directly infringe at least claim 42 of the '870 Patent with the specific intent to encourage such infringement, and knowing that the acts induced constitute patent infringement. Microsoft's inducement includes, for example, providing software useable only with computer systems, extensive training and technical guides, software development kits, product data sheets, demonstrations, software and hardware specifications, installation guides, and other forms of support that induce its customers and/or end users to directly infringe at least claim 42 of the '870 Patent by installing and using the Microsoft Accused Products on a computer system.

90. Microsoft has had knowledge of the '870 Patent since at least April 23, 2015.

91. Microsoft uses, offers to sell, and sells the Microsoft Accused Products knowing that Microsoft has infringed and continues to infringe at least claim 42 of the '870 Patent under 35 U.S.C. § 271(a) directly.

92. As a direct and proximate result of Microsoft's acts of patent infringement, RAH Color Technologies has been and continues to be injured and has sustained, and will continue to sustain, damages.

COUNT VI: INFRINGEMENT OF U.S. PATENT '897 CLAIM 32

93. RAH Color Technologies incorporates by reference the allegations set forth in paragraphs 1-43 and 46 of this Complaint as though set forth in full herein.

94. Claim 32 of the '897 Patent provides:

| | |
|-------------------|---|
| Claim 32 Preamble | A method for providing control to a user for processing color images comprising the steps of: |
| Element A | providing an interface through which said user is able to select one or more sites, each having one or more color input or output devices, wherein at least one of said sites is capable of being remotely located with respect to said user; |
| Element B | providing information regarding identity or location of said one or more sites useable for communication with said sites; and |
| Element C | providing information for transforming input color image data into output color image data for the color input or output devices at said sites comprising at least information representing the gamuts or a relationship between the gamuts of said color devices, wherein said information for transforming comprises at least user preferences for color reproduction by at least one of the color devices. |

95. Microsoft Accused Products provide control for processing color images through the Windows Color System (“WCS”) and its color management features. WCS is an integral component of the Windows operating system installed on computers since at least version 6 (“Windows Vista”). WCS includes two color management modules (“CMMs”): Color Infrastructure and Translation Engine (“CITE”) for processing WCS components, and a legacy ICM3 CMM (v.4 compliant) used for processing International Color Consortium (“ICC”) color profiles.

96. In Microsoft Accused Products, Windows displays a color management interface that includes listings of devices connected to Windows, including displays and printers. Connected devices such as printers communicate with Windows via a network connection (e.g., TCP/IP). WCS’s color management interface also provides user preferences for color

management, including the selection of different types of gamut mappings and profiles for different rendering scenarios, as examples. Windows also includes preferences for color management such as black enhancement, which improves the gamut mapping of neutrals and enhances the dynamic range and contrast of printed output.

97. In Microsoft Accused Products, WCS utilizes various color components, including Device Profiles, Viewing Conditions Profiles, and Gamut Mapping Profiles (collectively “WCS Profiles”), all of which are used for building color transformations to ensure that colors match between different devices and sources. As an example, when printing digital color images encoded as sRGB values (e.g., from a digital camera), WCS Profiles are used in the transformation of sRGB values to CMYK values for a printer. To assist in the color management and matching process, Windows includes a Display Calibration Wizard for user-calibration of displays. This calibration ensures that the monitor displays colors as intended, and ensures that any colors (e.g., between image viewed on monitor and image as printed) are substantially the same, based on their rendering characteristics and capabilities, regardless of location (e.g., if printer is not within physical proximity of computer).

98. The WCS Gamut Mapping Profiles define gamut mapping procedures used for generating color transformations by defining the algorithms that specify default gamut mapping operations for different color reproduction requirements (e.g., graphics and line art, photographic images). Upon information and belief, Gamut Mapping Profiles are used both for preparing gamut boundary descriptions (“GBD”) for devices and in gamut mapping between different devices. In addition to providing default Gamut-Mapping Model Profiles that embody gamut scaling operations, Microsoft enables developers and OEMs to customize such Profiles for their applications, on information and belief.

99. Microsoft infringes claim 32 of the '897 Patent when it makes, imports, uses, sells and offers for sale the Microsoft Accused Products, including its use in relation to product testing and improvement responsive to user feedback, and demonstration at trade shows, sales facilities, customer sites, and training/tutorial videos.

100. In addition, Microsoft induces infringement of claim 32 of the '897 Patent by importing and selling the Microsoft Accused Products for use by its customers and/or end-users.

101. Upon information and belief, Microsoft's customers (including developers and OEMs) and/or end users have directly infringed and are directly infringing each and every claim limitation of at least claim 32 of the '897 Patent. Microsoft actively induces customers and users to directly infringe each and every claim limitation of at least claim 32 of the '897 Patent under 35 U.S.C. § 271(b). Microsoft has been and is knowingly inducing its customers and/or end users to directly infringe at least claim 32 of the '897 Patent with the specific intent to encourage such infringement, and knowing that the acts induced constitute patent infringement. Microsoft's inducement includes, for example, providing extensive training and technical guides, software development kits, product data sheets, demonstrations, software and hardware specifications, installation guides, and other forms of support (e.g., maintenance contracts, consulting services, system integration) that induce its customers and/or end users to directly infringe at least claim 32 of the '897 Patent by using the Microsoft Accused Products.

102. Microsoft has had knowledge of the '897 Patent since at least April 23, 2015.

103. As a direct and proximate result of Microsoft's acts of patent infringement, RAH Color Technologies has been and continues to be injured and has sustained, and will continue to sustain, damages.

COUNT VII: INFRINGEMENT OF U.S. PATENT '897 CLAIM 34

104. RAH Color Technologies incorporates by reference the allegations set forth in paragraphs 1-43, 46, and 93-103 of this Complaint as though set forth in full herein.

105. Claim 34 of the '897 Patent provides:

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| Claim 34 | The method according to claim 32 wherein said user preferences include at least a selection of gamut scaling operations. |
|----------|--|

106. In Microsoft Accused Products, WCS implements gamut mapping operations that use gamut boundary descriptions, or GBDs, upon information and belief. Users can select which gamut mapping model to employ for a given color reproduction (e.g., for charts and graphs, photography, proofing and line art). These gamut mapping operations entail gamut scaling (e.g., alignment of neutral axes of source and destination gamuts, compression of lightness, expansion of chroma).

107. Microsoft infringes claim 34 of the '897 Patent when it makes, imports, uses, sells and offers for sale the Microsoft Accused Products, including its use in relation to product testing and improvement responsive to user feedback, and demonstration at trade shows, sales facilities, customer sites, and training/tutorial videos.

108. In addition, Microsoft induces infringement of claim 34 of the '897 Patent by importing and selling the Microsoft Accused Products for use by its customers and/or end-users.

109. Upon information and belief, Microsoft's customers (including developers and OEMs) and/or end users have directly infringed and are directly infringing each and every claim limitation of at least claim 34 of the '897 Patent. Microsoft actively induces customers and users to directly infringe each and every claim limitation of at least claim 34 of the '897 Patent under 35 U.S.C. § 271(b). Microsoft has been and is knowingly inducing its customers and/or end users

to directly infringe at least claim 34 of the '897 Patent with the specific intent to encourage such infringement, and knowing that the acts induced constitute patent infringement. Microsoft's inducement includes, for example, providing extensive training and technical guides, software development kits, product data sheets, demonstrations, software and hardware specifications, installation guides, and other forms of support (e.g., maintenance contracts, consulting services, system integration) that induce its customers and/or end users to directly infringe at least claim 34 of the '897 Patent by using the Microsoft Accused Products.

110. Microsoft has had knowledge of the '897 Patent since at least April 23, 2015.

111. As a direct and proximate result of Microsoft's acts of patent infringement, RAH Color Technologies has been and continues to be injured and has sustained, and will continue to sustain, damages.

COUNT VIII: INFRINGEMENT OF U.S. PATENT '897 CLAIM 35

112. RAH Color Technologies incorporates by reference the allegations set forth in paragraphs 1-43, 46, and 93-111 of this Complaint as though set forth in full herein.

113. Claim 35 of the '897 Patent provides:

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| Claim 35 | The method according to claim 34 wherein said scaling operations arc [sic; "are"] capable of expanding at least some of the colors in a gamut mapping for a color output device. |
|----------|--|

114. In Microsoft Accused Products, WCS implements gamut mapping operations that use gamut boundary descriptions, or GBDs, upon information and belief. At least some of these gamut mapping operations involve at least partial expansion of a source gamut to match that of a destination gamut. For example, alignment of source and destination gamuts along their neutral axes involves various operations that includes chroma expansion along a fixed lightness plane (i.e., plane perpendicular to the achromatic Lightness axis).

115. Microsoft infringes claim 35 of the '897 Patent when it makes, imports, uses, sells and offers for sale the Microsoft Accused Products, including its use in relation to product testing and improvement responsive to user feedback, and demonstration at trade shows, sales facilities, customer sites, and training/tutorial videos.

116. In addition, Microsoft induces infringement of claim 35 of the '897 Patent by importing and selling the Microsoft Accused Products for use by its customers and/or end-users.

117. Upon information and belief, Microsoft's customers (including developers and OEMs) and/or end users have directly infringed and are directly infringing each and every claim limitation of at least claim 35 of the '897 Patent. Microsoft actively induces customers and users to directly infringe each and every claim limitation of at least claim 35 of the '897 Patent under 35 U.S.C. § 271(b). Microsoft has been and is knowingly inducing its customers and/or end users to directly infringe at least claim 35 of the '897 Patent with the specific intent to encourage such infringement, and knowing that the acts induced constitute patent infringement. Microsoft's inducement includes, for example, providing extensive training and technical guides, software development kits, product data sheets, demonstrations, software and hardware specifications, installation guides, and other forms of support (e.g., maintenance contracts, consulting services, system integration) that induce its customers and/or end users to directly infringe at least claim 35 of the '897 Patent by using the Microsoft Accused Products.

118. Microsoft has had knowledge of the '897 Patent since at least April 23, 2015.

119. As a direct and proximate result of Microsoft's acts of patent infringement, RAH Color Technologies has been and continues to be injured and has sustained, and will continue to sustain, damages.

COUNT IX: INFRINGEMENT OF U.S. PATENT '008 CLAIM 28

120. RAH Color Technologies incorporates by reference the allegations set forth in paragraphs 1-43 of this Complaint as though set forth in full herein.

121. Claim 28 of the '008 Patent provides:

| | |
|-------------------|--|
| Claim 28 Preamble | A method for color rendering using a computer system having a display coupled to said computer system, said method comprising the steps of: |
| Element A | displaying on the display a menu of selections which enable a user to select at least user preferences for color reproduction; and |
| Element B | storing in memory at least tonal transfer curves for a plurality of color channels, color image data, and one or more color transformations for converting a first set of color coordinates into a second set of coordinates wherein said tonal transfer curves and said one or more color transformations are at least partly in accordance with calibration data in device-independent units of color and are useable in combination to control rendering of said color image data, and at least one of said one or more color transformations is a chromatic adaptation transform useable to compensate for change in viewing conditions. |

122. “Microsoft Accused Color Systems” include the Windows operating system and its Windows Color System (including its components and features, such as display calibration) available with all versions of Vista, Windows 7, Windows 8, and Windows 10, used alone, or in combination with Microsoft Paint; and any other hardware and/or software that provides the same or equivalent functionality as described in paragraphs 123-130 of Count IX, paragraph 138 of Count X, paragraphs 146-149 of Count XI, paragraph 157 of Count XII, paragraph 165 of Count XIII, paragraph 173 of Count XIV, and paragraph 181 of Count XV.

123. Microsoft Accused Color Systems provide control for processing color images through the Windows Color System (“WCS”) and its color management features. WCS is an integral component of the Windows operating system installed on computers since at least version 6 (“Windows Vista”). WCS includes two color management modules (“CMMs”): Color

Infrastructure and Translation Engine (“CITE”) for processing WCS components, and a legacy ICM3 CMM (v.4 compliant) used for processing International Color Consortium (“ICC”) color profiles. WCS utilizes CITE as the color engine in mixed dataflows that use both ICC profiles and WCS components.

124. In Microsoft Accused Color Systems, Windows displays a color management interface that displays various user preferences for color management, such as the type of device profile (.cdmp), viewing condition profile (.camp) and gamut mapping profile (.gmmp) to use.

125. Windows machines, at the time of installation, store color images (e.g., sample color photographs), as well as a variety of ICC profiles and device model profiles, such as the sRGB and sRGB_v4_ICC_preference ICC profiles. Windows also stores other ICC profiles as devices are added/installed on Windows, such as ICC profiles for printers. ICC profiles, such as the sRGB ICC profile, include certain tagged elements, such as TRC-type tags (also used in monitor profiles and RGB input device profiles). TRC-type tags define tone reproduction curves, a type of tonal transfer curve. Monitor and RGB input device profiles also include XYZ-type tags (also called MatrixColumnTags) that define matrices used for transforming device-dependent color values to device-independent color values (inverse matrices are used for transforming from device-independent color values to device-dependent color values). Other ICC profiles (such as those used for CMYK output devices) include BToA-type tags, which define one-dimensional curves corresponding to tonal transfer curves, as well as a matrix or a multidimensional lookup table, both used for transforming device-independent color values to device-dependent values. Additionally, Windows stores WCS components, such as device models, gamut mapping models, and color appearance models, all used for the generation of

color transformations that are processed by WCS CMM (e.g., CITE) through the device-independent CIEXYZ color space (akin to the ICC's Profile Connection Space).

126. Windows also stores ICC profiles (e.g., sRGB_v4_ICC_preference profile) that include a chromatic adaptation transform data structure (indicated by the "chad" tag of ICC profiles), which transforms color values measured under one type of illumination (e.g., D65) to color values suited to different illumination (e.g., D50).

127. The ICC profiles (including tagged data elements) used by WCS are created using calibrated rendering devices. For example, ICC profiles for printers are believed to be created based on measurements of colors as rendered by a calibrated printer under specific reference conditions (e.g., different paper types). ICC profiles for monitors are created in a similar fashion. As a result, the tonal transfer curves and transformations within the profile are based on those color measurements. As is known in the art, color measurement devices (e.g., spectrophotometer, densitometer) provide color measurements in device-independent values, such as $L^*a^*b^*$ or density units.

128. The ICC profiles used by WCS use color transformations and tonal transfer curves in combination when generating color values useable by an output or rendering device. For example, an input or monitor profile's XYZ-type data are used to populate a matrix transform, which is used with the TRC-type data when transforming color values into a device-independent intermediate representation of color data. Similarly, in output device profiles, the matrix and/or multidimensional lookup table and one-dimensional "out-curves" of the BToA-type element are used in combination when transforming color values to device codes for rendering.

129. In addition, with respect to the chromatic adaptation transform, the transform generates XYZ_{pcs} values based on applying a matrix (e.g., a Bradford matrix transform) to XYZ_{src} color values. The XYZ_{src} values are color values produced by a transformation of device codes based on calibration measurements and characterization of the input device. As such, the chromatic adaptation transform will also be based on calibration data, and used in combination with tonal transfer curves and transformations of ICC profiles.

130. In mixed workflows using ICC profiles and WCS components, upon information and belief, WCS provides processing models to generate color transformations that are based on data found within ICC profiles to generate HProfiles, at least when generating multiprofile transformations.

131. Microsoft infringes claim 28 of the '008 Patent when it makes, imports, uses, sells and offers for sale the Microsoft Accused Color Systems, including its use in relation to product testing and improvement responsive to user feedback, and demonstration at trade shows, sales facilities, customer sites, and training/tutorial videos.

132. In addition, Microsoft induces infringement of claim 28 of the '008 Patent by importing and selling the Microsoft Accused Color Systems for use by its customers and/or end-users.

133. Upon information and belief, Microsoft's customers (including developers and OEMs) and/or end users have directly infringed and are directly infringing each and every claim limitation of at least claim 28 of the '008 Patent. Microsoft actively induces customers and users to directly infringe each and every claim limitation of at least claim 28 of the '008 Patent under 35 U.S.C. § 271(b). Microsoft has been and is knowingly inducing its customers and/or end users to directly infringe at least claim 28 of the '008 Patent with the specific intent to encourage such

infringement, and knowing that the acts induced constitute patent infringement. Microsoft’s inducement includes, for example, providing extensive training and technical guides, software development kits, product data sheets, demonstrations, software and hardware specifications, installation guides, and other forms of support (e.g., maintenance contracts, consulting services, system integration) that induce its customers and/or end users to directly infringe at least claim 28 of the ’008 Patent by using the Microsoft Accused Color Systems.

134. Microsoft has had knowledge of the ’008 Patent since at least April 23, 2015.

135. As a direct and proximate result of Microsoft’s acts of patent infringement, RAH Color Technologies has been and continues to be injured and has sustained, and will continue to sustain, damages.

COUNT X: INFRINGEMENT OF U.S. PATENT ’008 CLAIM 29

136. RAH Color Technologies incorporates by reference the allegations set forth in paragraphs 1-43 and 120-135 of this Complaint as though set forth in full herein.

137. Claim 29 of the ’008 Patent provides:

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| Claim 29 | The method according to claim 28 further comprising the step of enabling the user to display a reproduction of said color image data on the display, and to associate annotations with said reproduction. |
|----------|---|

138. In Microsoft Accused Color Systems, Windows comes with the Paint application. Paint is used for viewing and editing color images, and allows users to add annotations to those images.

139. Microsoft infringes claim 29 of the ’008 Patent when it makes, imports, uses, sells and offers for sale the Microsoft Accused Color Systems, including its use in relation to product testing and improvement responsive to user feedback, and demonstration at trade shows, sales facilities, customer sites, and training/tutorial videos.

140. In addition, Microsoft induces infringement of claim 29 of the '008 Patent by importing and selling the Microsoft Accused Color Systems for use by its customers and/or end-users.

141. Upon information and belief, Microsoft's customers (including developers and OEMs) and/or end users have directly infringed and are directly infringing each and every claim limitation of at least claim 29 of the '008 Patent. Microsoft actively induces customers and users to directly infringe each and every claim limitation of at least claim 29 of the '008 Patent under 35 U.S.C. § 271(b). Microsoft has been and is knowingly inducing its customers and/or end users to directly infringe at least claim 29 of the '008 Patent with the specific intent to encourage such infringement, and knowing that the acts induced constitute patent infringement. Microsoft's inducement includes, for example, providing extensive training and technical guides, software development kits, product data sheets, demonstrations, software and hardware specifications, installation guides, and other forms of support (e.g., maintenance contracts, consulting services, system integration) that induce its customers and/or end users to directly infringe at least claim 29 of the '008 Patent by using the Microsoft Accused Color Systems.

142. Microsoft has had knowledge of the '008 Patent since at least April 23, 2015.

143. As a direct and proximate result of Microsoft's acts of patent infringement, RAH Color Technologies has been and continues to be injured and has sustained, and will continue to sustain, damages.

COUNT XI: INFRINGEMENT OF U.S. PATENT '008 CLAIM 30

144. RAH Color Technologies incorporates by reference the allegations set forth in paragraphs 1-43 and 120-135 of this Complaint as though set forth in full herein.

145. Claim 30 of the '008 Patent provides:

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| Claim 30 | The method according to claim 28 wherein said storing step further comprises storing in the memory gamut data of at least the color output device or another color device in device independent units of color for use in combination with said tonal transfer curves and said one or more color transformations to control rendering of said color image data for improved color matching between said color output device and said another color device. |
|----------|--|

146. Microsoft Accused Color Systems are ICC v.4-compliant, which means they support the use of the ICC-defined Perceptual Reference Medium Gamut (“PRMG”) or a similarly structured description of device gamuts for gamut mapping. Upon information and belief, WCS, through the applicable CMM (e.g., CITE or ICM3 CMMs), processes profiles that rely upon the PRMG or similarly structured gamut data (or stores such gamut data) to implement gamut mapping that insures that colors produced by the color devices better match.

147. The PRMG provides a standard gamut representation in coordinates of the ICC-defined Profile Connection Space (“PCS”) that serves as an intermediate for transforming colors between devices having different gamuts. A dataflow using the PRMG employs the stored PRMG, to map colors from an input device to an output device using an intermediate color-to-color’ transformation (i.e., input gamut in PCS values to PRMG and/or PRMG to an output gamut represented in PCS coordinates). In addition, a color-to-color’ mapping that embodies a relationship between gamuts can be computed directly using input and output gamut descriptors that are structured as is the PRMG.

148. Additionally, WCS components include device models that are used in combination with color appearance models for computing gamut boundary descriptions (“GBD”) for devices. GBDs are operated upon by gamut-mapping model profiles in the course of mapping input to output gamuts. The device models themselves are informed by calibration data (colorimetric measurements) that serve as the basis for conversions between device codes and

device independent values in color appearance coordinates. On information and belief, at least in hybrid WCS-ICC dataflows, data from A2B and B2A structures of ICC profiles are operated upon by WCS color device model profiles (.cdmp).

149. Additionally, gamut mapping models are used in combination with ICC profiles, at least in mixed ICC/WCS workflows for the creation of multiprofile transformations.

150. Microsoft infringes claim 30 of the '008 Patent when it makes, imports, uses, sells and offers for sale the Microsoft Accused Color Systems, including its use in relation to product testing and improvement responsive to user feedback, and demonstration at trade shows, sales facilities, customer sites, and training/tutorial videos.

151. In addition, Microsoft induces infringement of claim 30 of the '008 Patent by importing and selling the Microsoft Accused Color Systems for use by its customers and/or end-users.

152. Upon information and belief, Microsoft's customers (including developers and OEMs) and/or end users have directly infringed and are directly infringing each and every claim limitation of at least claim 30 of the '008 Patent. Microsoft actively induces customers and users to directly infringe each and every claim limitation of at least claim 30 of the '008 Patent under 35 U.S.C. § 271(b). Microsoft has been and is knowingly inducing its customers and/or end users to directly infringe at least claim 30 of the '008 Patent with the specific intent to encourage such infringement, and knowing that the acts induced constitute patent infringement. Microsoft's inducement includes, for example, providing extensive training and technical guides, software development kits, product data sheets, demonstrations, software and hardware specifications, installation guides, and other forms of support (e.g., maintenance contracts, consulting services,

system integration) that induce its customers and/or end users to directly infringe at least claim 30 of the '008 Patent by using the Microsoft Accused Color Systems.

153. Microsoft has had knowledge of the '008 Patent since at least April 23, 2015.

154. As a direct and proximate result of Microsoft's acts of patent infringement, RAH Color Technologies has been and continues to be injured and has sustained, and will continue to sustain, damages.

COUNT XII: INFRINGEMENT OF U.S. PATENT '008 CLAIM 31

155. RAH Color Technologies incorporates by reference the allegations set forth in paragraphs 1-43 and 120-135 of this Complaint as though set forth in full herein.

156. Claim 31 of the '008 Patent provides:

| | |
|-------------------|--|
| Claim 31 Preamble | The method according to claim 28 further comprising the steps of |
| Element C | enabling display of parts of said color image data which are outside the gamut of the color output device and |
| Element D | storing a data structure in said memory whose inputs are color values and whose outputs indicate whether input values are either in or out of gamut for the color output device. |

157. The ICC profiles stored by Microsoft Accused Color Systems include the “gamutTag” data structure. This structure is used to indicate if an input color value is in or out-of-gamut for a particular rendering device. Because this structure indicates if an input color is in or out of gamut for a device, it can be used to display if any colors in a color image are outside the gamut of the rendering device.

158. Microsoft infringes claim 31 of the '008 Patent when it makes, imports, uses, sells and offers for sale the Microsoft Accused Color Systems, including its use in relation to product testing and improvement responsive to user feedback, and demonstration at trade shows, sales facilities, customer sites, and training/tutorial videos.

159. In addition, Microsoft induces infringement of claim 31 of the '008 Patent by importing and selling the Microsoft Accused Color Systems for use by its customers and/or end-users.

160. Upon information and belief, Microsoft's customers (including developers and OEMs) and/or end users have directly infringed and are directly infringing each and every claim limitation of at least claim 31 of the '008 Patent. Microsoft actively induces customers and users to directly infringe each and every claim limitation of at least claim 31 of the '008 Patent under 35 U.S.C. § 271(b). Microsoft has been and is knowingly inducing its customers and/or end users to directly infringe at least claim 31 of the '008 Patent with the specific intent to encourage such infringement, and knowing that the acts induced constitute patent infringement. Microsoft's inducement includes, for example, providing extensive training and technical guides, software development kits, product data sheets, demonstrations, software and hardware specifications, installation guides, and other forms of support (e.g., maintenance contracts, consulting services, system integration) that induce its customers and/or end users to directly infringe at least claim 31 of the '008 Patent by using the Microsoft Accused Color Systems.

161. Microsoft has had knowledge of the '008 Patent since at least April 23, 2015.

162. As a direct and proximate result of Microsoft's acts of patent infringement, RAH Color Technologies has been and continues to be injured and has sustained, and will continue to sustain, damages.

COUNT XIII: INFRINGEMENT OF U.S. PATENT '008 CLAIM 32

163. RAH Color Technologies incorporates by reference the allegations set forth in paragraphs 1-43, 120-135, and 144-154 of this Complaint as though set forth in full herein.

164. Claim 32 of the '008 Patent provides:

| | |
|----------|--|
| Claim 32 | The method according to claim 28 [sic; “30”] wherein said gamut data comprises the darkest color reproducible by the color output device and said darkest color is useable in gamut mapping. |
|----------|--|

165. In Microsoft Accused Color Systems, WCS gamut mapping options include black enhancement. Black enhancement uses the darkest color reproducible by a device (e.g., printer) for gamut mapping purposes.

166. Microsoft infringes claim 32 of the '008 Patent when it makes, imports, uses, sells and offers for sale the Microsoft Accused Color Systems, including its use in relation to product testing and improvement responsive to user feedback, and demonstration at trade shows, sales facilities, customer sites, and training/tutorial videos.

167. In addition, Microsoft induces infringement of claim 32 of the '008 Patent by importing and selling the Microsoft Accused Color Systems for use by its customers and/or end-users.

168. Upon information and belief, Microsoft's customers (including developers and OEMs) and/or end users have directly infringed and are directly infringing each and every claim limitation of at least claim 32 of the '008 Patent. Microsoft actively induces customers and users to directly infringe each and every claim limitation of at least claim 32 of the '008 Patent under 35 U.S.C. § 271(b). Microsoft has been and is knowingly inducing its customers and/or end users to directly infringe at least claim 32 of the '008 Patent with the specific intent to encourage such infringement, and knowing that the acts induced constitute patent infringement. Microsoft's inducement includes, for example, providing extensive training and technical guides, software development kits, product data sheets, demonstrations, software and hardware specifications, installation guides, and other forms of support (e.g., maintenance contracts, consulting services,

system integration) that induce its customers and/or end users to directly infringe at least claim 32 of the '008 Patent by using the Microsoft Accused Color Systems.

169. Microsoft has had knowledge of the '008 Patent since at least April 23, 2015.

170. As a direct and proximate result of Microsoft's acts of patent infringement, RAH Color Technologies has been and continues to be injured and has sustained, and will continue to sustain, damages.

COUNT XIV: INFRINGEMENT OF U.S. PATENT '008 CLAIM 34

171. RAH Color Technologies incorporates by reference the allegations set forth in paragraphs 1-43 and 120-135 of this Complaint as though set forth in full herein.

172. Claim 34 of the '008 Patent provides:

| | |
|----------|---|
| Claim 34 | The method according to claim 28 further comprising the step of gamut mapping of color wherein planes of lightness are shifted in order to map input neutrals to output neutrals. |
|----------|---|

173. In Microsoft Accused Color Systems, WCS performs gamut operations for neutrals, for example as part of a mixed ICC/WCS color management process, to adjust for deviations of conventionally defined device/colorant neutrals from colorimetrically defined neutrals. This adjustment entails redefining, or shifting, the chromatic components of the colors of device neutrals within a plane of Lightness.

174. Microsoft infringes claim 34 of the '008 Patent when it makes, imports, uses, sells and offers for sale the Microsoft Accused Color Systems, including its use in relation to product testing and improvement responsive to user feedback, and demonstration at trade shows, sales facilities, customer sites, and training/tutorial videos.

175. In addition, Microsoft induces infringement of claim 34 of the '008 Patent by importing and selling the Microsoft Accused Color Systems for use by its customers and/or end-users.

176. Upon information and belief, Microsoft's customers (including developers and OEMs) and/or end users have directly infringed and are directly infringing each and every claim limitation of at least claim 34 of the '008 Patent. Microsoft actively induces customers and users to directly infringe each and every claim limitation of at least claim 34 of the '008 Patent under 35 U.S.C. § 271(b). Microsoft has been and is knowingly inducing its customers and/or end users to directly infringe at least claim 34 of the '008 Patent with the specific intent to encourage such infringement, and knowing that the acts induced constitute patent infringement. Microsoft's inducement includes, for example, providing extensive training and technical guides, software development kits, product data sheets, demonstrations, software and hardware specifications, installation guides, and other forms of support (e.g., maintenance contracts, consulting services, system integration) that induce its customers and/or end users to directly infringe at least claim 34 of the '008 Patent by using the Microsoft Accused Color Systems.

177. Microsoft has had knowledge of the '008 Patent since at least April 23, 2015.

178. As a direct and proximate result of Microsoft's acts of patent infringement, RAH Color Technologies has been and continues to be injured and has sustained, and will continue to sustain, damages.

COUNT XV: INFRINGEMENT OF U.S. PATENT '008 CLAIM 36

179. RAH Color Technologies incorporates by reference the allegations set forth in paragraphs 1-43 and 120-143 of this Complaint as though set forth in full herein.

180. Claim 36 of the '008 Patent provides:

| | |
|----------|--|
| Claim 36 | The method according to claim 29 further comprising the step of enabling communication with one or more other computer systems through a network interface of said computer system, in which said annotations are communicated to one or more users at one or more other computer systems. |
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181. In Microsoft Accused Color Systems, Windows comes with Paint. Paint is used for viewing and editing color images; users can also add annotations to those images. Users can save these images, along with annotations, as a JPEG file, and then use Paint's "Send in e-mail" option to communicate the image and annotations to other computers.

182. Microsoft infringes claim 36 of the '008 Patent when it makes, imports, uses, sells and offers for sale the Microsoft Accused Color Systems, including its use in relation to product testing and improvement responsive to user feedback, and demonstration at trade shows, sales facilities, customer sites, and training/tutorial videos.

183. In addition, Microsoft induces infringement of claim 36 of the '008 Patent by importing and selling the Microsoft Accused Color Systems for use by its customers and/or end-users.

184. Upon information and belief, Microsoft's customers (including developers and OEMs) and/or end users have directly infringed and are directly infringing each and every claim limitation of at least claim 36 of the '008 Patent. Microsoft actively induces customers and users to directly infringe each and every claim limitation of at least claim 36 of the '008 Patent under 35 U.S.C. § 271(b). Microsoft has been and is knowingly inducing its customers and/or end users to directly infringe at least claim 36 of the '008 Patent with the specific intent to encourage such infringement, and knowing that the acts induced constitute patent infringement. Microsoft's inducement includes, for example, providing extensive training and technical guides, software development kits, product data sheets, demonstrations, software and hardware specifications,

installation guides, and other forms of support (e.g., maintenance contracts, consulting services, system integration) that induce its customers and/or end users to directly infringe at least claim 36 of the '008 Patent by using the Microsoft Accused Color Systems.

185. Microsoft has had knowledge of the '008 Patent since at least April 23, 2015.

186. As a direct and proximate result of Microsoft's acts of patent infringement, RAH Color Technologies has been and continues to be injured and has sustained, and will continue to sustain, damages.

COUNT XVI: INFRINGEMENT OF U.S. PATENT '802 CLAIM 15

187. RAH Color Technologies incorporates by reference the allegations set forth in paragraphs 1-43 of this Complaint as though set forth in full herein.

188. Claim 15 of the '802 Patent provides:

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| Claim 15 Preamble | A method of digital image processing comprising: |
| Element A | displaying, with the aid of a processor, menus on a color video display, said menus comprising elements stored in memory that provide graphical representations of functions that are moveable upon said video display by a user and initiate execution of programs to perform said functions when selected by a user; |
| Element B | capturing images of scenes in a plurality of channels with a camera having a two-dimensional array of sensing elements, wherein at least one of said scenes comprise one or more objects that are in motion with respect to said camera; |
| Element C | recording responses of a sensor that provides a measurement of at least a level of ambient light, |
| Element D | wherein said sensor is distinct from said camera and integrable with said system; |
| Element E | converting outputs from sensing elements of said camera into digital image data representative of one or more two-dimensional images; |

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| Element F | storing said digital image data in a file, said file comprising a header and fields of data providing information that enables interpretation of said digital image data by an external computer system that receives said file through an interface; |
| Element G | rendering, on said color video display, a representation of at least one of said one or more two-dimensional images based upon said digital image data; and |
| Element H | adjusting rendering upon said color video display responsive to said measurement of said at least the level of ambient light. |

189. “Microsoft Accused Surface Devices” include the Microsoft Surface line of tablet computers (including but not limited to Surface Pro models preinstalled with Windows 8 or Windows 10); and other hardware and software that include the same or equivalent functionality as described in paragraphs 190-194 of Count XVI, paragraph 202 of Count XVII, paragraph 210 of Count XVIII, paragraphs 218-220 of Count XIX, paragraph 226 of Count XX, paragraph 232 of Count XXI, paragraph 238 of Count XXII, paragraph 244 of Count XXIII, and paragraph 250 of Count XXIV.

190. Microsoft Accused Surface Devices are computers that include a processor, multiple digital cameras, and software for capturing and processing digital images.

191. Microsoft Accused Surface Devices use the processor to display various menu items (e.g., application tiles) that can be moved around the display by long-pressing on the item. Tapping on the menu item triggers the corresponding application to launch.

192. Microsoft Accused Surface Devices have multiple digital cameras, each having sensing elements in the form of an image sensor (e.g., CMOS) used to capture color images of scenes in the form of still photographs and videos. The image sensor converts light striking the sensor into digital image data corresponding to the captured scene. The digital image data is then stored as an image file, such as a JPEG file as an example. The JPEG file itself includes a header and various fields of information, such as Color Representation as an example. The Color

Representation field indicates the color “space” used, such as sRGB, and allows for external computers (running image viewing software) to know the color representation of the image and process the image properly. Images can be transferred to external computer systems by way of Microsoft Accused Devices’ Wi-Fi connection.

193. Images captured by Microsoft Accused Surface Devices (e.g., JPEGs) are rendered on-screen at the time of capture, and also when viewed using an image viewing application such as Photos.

194. Microsoft Accused Surface Devices also include an ambient light sensor, which is used to measure the amount of ambient light at the device. Based on the amount of ambient light, Microsoft Accused Surface Devices automatically adjust the brightness of the display. Increased display brightness enhances the contrast and saturation of colors, which are otherwise diminished by the reflection of light from the display’s surface. The ambient light sensor of Microsoft Accused Surface Devices is a separate sensor from the digital camera/sensor, and is integrated into the body of Microsoft Accused Surface Devices.

195. Microsoft infringes claim 28 of the ’008 Patent when it makes, imports, uses, sells and offers for sale the Microsoft Accused Surface Devices, including its use in relation to product testing and improvement responsive to user feedback, and demonstration at trade shows, sales facilities, customer sites, and training/tutorial videos.

196. In addition, Microsoft induces infringement of claim 28 of the ’008 Patent by importing and selling the Microsoft Accused Surface Devices for use by its customers and/or end-users.

197. Upon information and belief, Microsoft’s customers (including developers and OEMs) and/or end users have directly infringed and are directly infringing each and every claim

limitation of at least claim 15 of the '802 Patent. Microsoft actively induces customers and users to directly infringe each and every claim limitation of at least claim 15 of the '802 Patent under 35 U.S.C. § 271(b). Microsoft has been and is knowingly inducing its customers and/or end users to directly infringe at least claim 15 of the '802 Patent with the specific intent to encourage such infringement, and knowing that the acts induced constitute patent infringement. Microsoft's inducement includes, for example, providing extensive training and technical guides, software development kits, product data sheets, demonstrations, software and hardware specifications, installation guides, and other forms of support (e.g., maintenance contracts, consulting services, system integration) that induce its customers and/or end users to directly infringe at least claim 15 of the '802 Patent by using the Microsoft Accused Surface Devices.

198. Microsoft has had knowledge of the '802 Patent since at least January 17, 2019.

199. As a direct and proximate result of Microsoft's acts of patent infringement, RAH Color Technologies has been and continues to be injured and has sustained, and will continue to sustain, damages.

COUNT XVII: INFRINGEMENT OF U.S. PATENT '802 CLAIM 24

200. RAH Color Technologies incorporates by reference the allegations set forth in paragraphs 1-43 and 187-199 of this Complaint as though set forth in full herein.

201. Claim 24 of the '802 Patent provides:

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| Claim 24 | The method according to claim 15 wherein said storing step stores said digital image data in said file in calibrated RGB coordinates. |
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202. Microsoft Accused Surface Devices store photos as JPEG files by default in sRGB coordinates. sRGB uses calibrated RGB coordinates, which are coordinates having a defined relationship to XYZ coordinates of the CIE Standard Observer.

203. Microsoft infringes claim 24 of the '802 Patent when it makes, imports, uses, sells and offers for sale the Microsoft Accused Surface Devices, including its use in relation to product testing and improvement responsive to user feedback, and demonstration at trade shows, sales facilities, customer sites, and training/tutorial videos.

204. In addition, Microsoft induces infringement of claim 24 of the '802 Patent by importing and selling the Microsoft Accused Surface Devices for use by its customers and/or end-users.

205. Upon information and belief, Microsoft's customers (including developers and OEMs) and/or end users have directly infringed and are directly infringing each and every claim limitation of at least claim 24 of the '802 Patent. Microsoft actively induces customers and users to directly infringe each and every claim limitation of at least claim 24 of the '802 Patent under 35 U.S.C. § 271(b). Microsoft has been and is knowingly inducing its customers and/or end users to directly infringe at least claim 24 of the '802 Patent with the specific intent to encourage such infringement, and knowing that the acts induced constitute patent infringement. Microsoft's inducement includes, for example, providing extensive training and technical guides, software development kits, product data sheets, demonstrations, software and hardware specifications, installation guides, and other forms of support (e.g., maintenance contracts, consulting services, system integration) that induce its customers and/or end users to directly infringe at least claim 24 of the '802 Patent by using the Microsoft Accused Surface Devices.

206. Microsoft has had knowledge of the '802 Patent since at least January 17, 2019.

207. As a direct and proximate result of Microsoft's acts of patent infringement, RAH Color Technologies has been and continues to be injured and has sustained, and will continue to sustain, damages.

COUNT XVIII: INFRINGEMENT OF U.S. PATENT '802 CLAIM 25

208. RAH Color Technologies incorporates by reference the allegations set forth in paragraphs 1-43 and 187-207 of this Complaint as though set forth in full herein.

209. Claim 25 of the '802 Patent provides:

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| Claim 25 | The method according to claim 24 further comprising the step of executing one or more programs for controlling tone reproduction and saturation of colors rendered upon said video display. |
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210. Microsoft Accused Surface Devices come preinstalled with the Photos app. The Photos app includes various filters and effects to change how the images appear in terms of at least color. These filters control both color tones and color saturation.

211. Microsoft infringes claim 25 of the '802 Patent when it makes, imports, uses, sells and offers for sale the Microsoft Accused Surface Devices, including its use in relation to product testing and improvement responsive to user feedback, and demonstration at trade shows, sales facilities, customer sites, and training/tutorial videos.

212. In addition, Microsoft induces infringement of claim 25 of the '802 Patent by importing and selling the Microsoft Accused Surface Devices for use by its customers and/or end-users.

213. Upon information and belief, Microsoft's customers (including developers and OEMs) and/or end users have directly infringed and are directly infringing each and every claim limitation of at least claim 25 of the '802 Patent. Microsoft actively induces customers and users to directly infringe each and every claim limitation of at least claim 25 of the '802 Patent under 35 U.S.C. § 271(b). Microsoft has been and is knowingly inducing its customers and/or end users to directly infringe at least claim 25 of the '802 Patent with the specific intent to encourage such infringement, and knowing that the acts induced constitute patent infringement. Microsoft's

inducement includes, for example, providing extensive training and technical guides, software development kits, product data sheets, demonstrations, software and hardware specifications, installation guides, and other forms of support (e.g., maintenance contracts, consulting services, system integration) that induce its customers and/or end users to directly infringe at least claim 25 of the '802 Patent by using the Microsoft Accused Surface Devices.

214. Microsoft has had knowledge of the '802 Patent since at least January 17, 2019.

215. As a direct and proximate result of Microsoft's acts of patent infringement, RAH Color Technologies has been and continues to be injured and has sustained, and will continue to sustain, damages.

COUNT XIX: INFRINGEMENT OF U.S. PATENT '288 CLAIM 1

216. RAH Color Technologies incorporates by reference the allegations set forth in paragraphs 1-43 and 189 of this Complaint as though set forth in full herein.

217. Claim 1 of the '288 Patent provides:

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| Claim 1 Preamble | A hand-held multifunctional digital apparatus comprising: |
| Element A | a controller comprising at least one programmable processor; |
| Element B | a plurality of sensors, wherein one or more of said sensors comprise a camera enabling capture of images and video streams of said images in a plurality of color channels, said images captured by said one or more sensors represent different fields of view; |
| Element C | memory for storing control programs for operating said apparatus and enabling a user interface, application programs for providing multifunctional capability, at least location information, and images and audio data in digital form; |
| Element D | a color display having a screen, said color display being operable to present menus of said user interface, to provide a viewfinder for displaying one or more of said images, and to display one or more of text and graphics associated with execution of one or more of said application programs, wherein when a user faces said screen said different fields of view comprise at least a first |

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| | field of view directed to the user and a second field of view directed away from the user; |
| Element E | an audio unit comprising one or more speakers and one or more microphones, said audio unit enabling the user to operate at least one of said application programs by speaking to the apparatus, wherein the apparatus confirms said operation by at least speaking to the user; |
| Element F | a transmitter a receiver for enabling, via an antenna, one or more of cellular telephony, or communication with an external system using one or more network protocols; |
| Element G | a connector for interfacing said apparatus with an external device; |
| Element H | software comprising at least: |
| Element I | an operating program that controls the functions of said apparatus responsive, in part, to inputs through the user interface; |
| Element J | one or more programs providing said user interface that renders on said color display graphic representations of functions for user selection and that employs speech recognition and computer generated speech to implement spoken interaction between the user and said apparatus using said audio unit, said apparatus assists the user in performing a task by guiding user performance through spoken directions by the apparatus; and |
| Element K | one or more programs for converting at least one of said images in a plurality of color channels into digital image data and for storing said digital image data in a file having a header and tags identifying fields of data that enable a receiver of said file to process said digital image data. |

218. Microsoft Accused Surface Devices are computers that can be held in one's hand that include a processor, memory (e.g., RAM, SSD), color display, at least two microphones, at least two speakers, wireless (e.g., Wi-Fi) networking transmitters (for communicating with external systems), and various connection ports (e.g., USB, DisplayPort) (for connecting to external devices). Microsoft Accused Devices include two digital cameras having image sensors, with one front-facing (towards the user), and one rear-facing (away from the user) to capture different fields of view. Microsoft Accused Surface Devices also include software for different functions, including the Windows operating system (including the graphical user interface),

Camera app (for taking color pictures and video), Photos App (for viewing color photos and video stored on the device), Groove Music app (for listening to music stored on the device), Maps app, and Cortana voice assistant, as examples. At least some of the software applications are presented as icons or tiles. Windows, as preinstalled on Microsoft Accused Surface Devices, also includes location services used for determining the device's location.

219. In Microsoft Accused Surface Devices, the Camera app is used for taking photos and video, and provides a viewfinder to display scenes for capture. The Camera app, when in use, also includes multiple settings (e.g., white balance, zoom, ISO, contrast) displayed in text and graphical form. Light captured by the Microsoft Accused Surface Devices' camera are converted into digital image data, which is then stored as an image file (e.g., JPEG). The JPEG file itself includes a header and various fields of information, such as Color Representation as an example. The Color Representation field indicates the color "space" used, such as sRGB, and allows for proper image processing.

220. Microsoft Accused Surface Devices use microphones and speakers for operation of the Cortana voice assistant and other voice-based operations. For example, a user can verbally request Cortana to perform a task (e.g., set an alarm), and Cortana will verbally confirm the operation (e.g., asking what time the alarm should be set for). For example, a user can hear step-by-step directions to a destination when using the Maps app.

221. Microsoft infringes claim 1 of the '288 Patent when it makes, imports, uses, sells and offers for sale the Microsoft Accused Surface Devices, including its use in relation to product testing and improvement responsive to user feedback, and demonstration at trade shows, sales facilities, customer sites, and training/tutorial videos.

222. Microsoft has had knowledge of the '288 Patent since at least January 17, 2019.

223. As a direct and proximate result of Microsoft's acts of patent infringement, RAH Color Technologies has been and continues to be injured and has sustained, and will continue to sustain, damages.

COUNT XX: INFRINGEMENT OF U.S. PATENT '288 CLAIM 2

224. RAH Color Technologies incorporates by reference the allegations set forth in paragraphs 1-43, 189, and 216-223 of this Complaint as though set forth in full herein.

225. Claim 2 of the '288 Patent provides:

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| Claim 2 | The apparatus according to claim 1 wherein said location information comprises at least GPS coordinates. |
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226. Microsoft Accused Surface Devices come installed with Windows. Windows includes location services that use GPS in part to determine the location of a device.

227. Microsoft infringes claim 2 of the '288 Patent when it makes, imports, uses, sells and offers for sale the Microsoft Accused Surface Devices, including its use in relation to product testing and improvement responsive to user feedback, and demonstration at trade shows, sales facilities, customer sites, and training/tutorial videos.

228. Microsoft has had knowledge of the '288 Patent since at least January 17, 2019.

229. As a direct and proximate result of Microsoft's acts of patent infringement, RAH Color Technologies has been and continues to be injured and has sustained, and will continue to sustain, damages.

COUNT XXI: INFRINGEMENT OF U.S. PATENT '288 CLAIM 17

230. RAH Color Technologies incorporates by reference the allegations set forth in paragraphs 1-43, 189, and 216-223 of this Complaint as though set forth in full herein.

231. Claim 17 of the '288 Patent provides:

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| Claim 17 | The apparatus according to claim 1 wherein said software further comprises a program that operates at least one of said one or more sensors comprising a camera to enable a video conference with another system in which images of at least one conversant are displayed on said color display. |
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232. Upon information and belief, Microsoft Accused Surface Devices come with the Skype messaging application preinstalled. Skype uses the Microsoft Accused Surface Devices’ camera for videoconferencing with other remote Skype users, with all conference participants shown on the display.

233. Microsoft infringes claim 17 of the ’288 Patent when it makes, imports, uses, sells and offers for sale the Microsoft Accused Surface Devices, including its use in relation to product testing and improvement responsive to user feedback, and demonstration at trade shows, sales facilities, customer sites, and training/tutorial videos.

234. Microsoft has had knowledge of the ’288 Patent since at least January 17, 2019.

235. As a direct and proximate result of Microsoft’s acts of patent infringement, RAH Color Technologies has been and continues to be injured and has sustained, and will continue to sustain, damages.

COUNT XXII: INFRINGEMENT OF U.S. PATENT ’288 CLAIM 18

236. RAH Color Technologies incorporates by reference the allegations set forth in paragraphs 1-43, 189, 216-223, and 230-235 of this Complaint as though set forth in full herein.

237. Claim 18 of the ’288 Patent provides:

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| Claim 18 | The apparatus according to claim 17 wherein said program that enables a video conference is operable to display common data to the user and said at least one conversant in said video conference, and said common data comprises at least one of a textual selection from a document, and numerical data from a spreadsheet. |
|----------|---|

238. Upon information and belief, Microsoft Accused Surface Devices come with the Skype messaging application preinstalled. Skype uses the Microsoft Accused Surface Devices’ camera for videoconferencing with other remote Skype users. As part of a videoconference, Skype users can share their screens, including any open documents, with all other participants.

239. Microsoft infringes claim 18 of the ’288 Patent when it makes, imports, uses, sells and offers for sale the Microsoft Accused Surface Devices, including its use in relation to product testing and improvement responsive to user feedback, and demonstration at trade shows, sales facilities, customer sites, and training/tutorial videos.

240. Microsoft has had knowledge of the ’288 Patent since at least January 17, 2019.

241. As a direct and proximate result of Microsoft’s acts of patent infringement, RAH Color Technologies has been and continues to be injured and has sustained, and will continue to sustain, damages.

COUNT XXIII: INFRINGEMENT OF U.S. PATENT ’288 CLAIM 19

242. RAH Color Technologies incorporates by reference the allegations set forth in paragraphs 1-43, 189, and 216-223 of this Complaint as though set forth in full herein.

243. Claim 19 of the ’288 Patent provides:

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| Claim 19 | The apparatus according to claim 1 wherein said software further comprises a program that communicates with an external computer that provides one or both of data or computation to assist in said guiding of user performance. |
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244. Microsoft Accused Surface Devices include the Maps app. The Maps app provides spoken step-by-step directions to a destination. These directions are determined by sending a device’s location data to a remote computer system (e.g., Microsoft map/navigation servers).

245. Microsoft infringes claim 19 of the '288 Patent when it makes, imports, uses, sells and offers for sale the Microsoft Accused Surface Devices, including its use in relation to product testing and improvement responsive to user feedback, and demonstration at trade shows, sales facilities, customer sites, and training/tutorial videos.

246. Microsoft has had knowledge of the '288 Patent since at least January 17, 2019.

247. As a direct and proximate result of Microsoft's acts of patent infringement, RAH Color Technologies has been and continues to be injured and has sustained, and will continue to sustain, damages.

COUNT XXIV: INFRINGEMENT OF U.S. PATENT '288 CLAIM 20

248. RAH Color Technologies incorporates by reference the allegations set forth in paragraphs 1-43, 189, and 216-223 of this Complaint as though set forth in full herein.

249. Claim 20 of the '288 Patent provides:

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| Claim 20 | The apparatus according to claim 1 wherein said apparatus assists the user in performing said task by utilizing one or more measurements and guiding the user performance through spoken directions by the apparatus responsive, in part, to values of said one or more measurements. |
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250. Microsoft Accused Surface Devices include the Maps app. The Maps app provides spoken step-by-step directions to a destination. These directions are determined based on measurements of a device's starting location data.

251. Microsoft infringes claim 20 of the '288 Patent when it makes, imports, uses, sells and offers for sale the Microsoft Accused Surface Devices, including its use in relation to product testing and improvement responsive to user feedback, and demonstration at trade shows, sales facilities, customer sites, and training/tutorial videos.

252. Microsoft has had knowledge of the '288 Patent since at least January 17, 2019.

253. As a direct and proximate result of Microsoft's acts of patent infringement, RAH Color Technologies has been and continues to be injured and has sustained, and will continue to sustain, damages.

WILLFUL INFRINGEMENT

254. Microsoft has infringed and continues to infringe the above identified claims of each of the Patents-in-Suit despite its knowledge of the Patents-in-Suit and its knowledge that at least Microsoft Accused Products and, Microsoft Accused Color Systems were and are using the technology claimed by the '870, '897, and '008 Patents since at least April 23, 2015; and Microsoft Accused Surface Devices were and are using the technology claimed by the '802 and '288 Patents since at least January 17, 2019; and the objectively high likelihood that its acts constitute patent infringement.

255. Microsoft's infringement of the Patents-in-Suit is willful and deliberate, entitling RAH Color Technologies to enhanced damages under 35 U.S.C. § 284.

256. Microsoft's willful infringement and unwillingness to enter into license negotiations with RAH Color Technologies make this an exceptional case such that RAH Color Technologies should be entitled to recover its attorneys' fees and costs incurred in relation to this matter pursuant to 35 U.S.C. §285.

JURY DEMAND

RAH Color Technologies demands a trial by jury on all issues so triable.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff RAH Color Technologies requests that this Court enter judgment in its favor and against Microsoft as follows:

- A. Adjudging, finding, and declaring that Microsoft has infringed the above-identified claims of each of the Patents-in-Suit under 35 U.S.C. § 271;
- B. Awarding the past and future damages arising out of Microsoft's infringement of the Patents-in-Suit to RAH Color Technologies in an amount no less than a reasonable royalty, together with prejudgment and post-judgment interest, in an amount according to proof;
- C. Adjudging, finding, and declaring that Microsoft's infringement is willful and awarding enhanced damages and fees as a result of that willfulness under 35 U.S.C. § 284;
- D. Adjudging, finding, and declaring that this is an "exceptional" case pursuant to 35 U.S.C. § 285;
- E. Awarding attorney's fees, costs, or other damages pursuant to 35 U.S.C. §§ 284 or 285 or as otherwise permitted by law; and
- F. Granting RAH Color Technologies such other further relief as is just and proper, or as the Court deems appropriate.

March 24, 2020

Respectfully submitted,

By: /s/ Alison Aubry Richards

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