IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

DYNAMIC DATA TECHNOLOGIES, LLC, *Plaintiff,* v. BRITHCOVE INC. AND BRIGHTCOVE HOLDINGS, INC., *Defendants*.	**Civil Action No._____** **JURY TRIAL DEMANDED**

COMPLAINT FOR PATENT INFRINGEMENT

Dynamic Data Technologies, LLC ("Dynamic Data") brings this action and makes the following allegations of patent infringement relating to U.S. Patent Nos.: 8,073,054 (the "'3054 Patent"); 6,774,918 (the "'918 Patent "); 6,996,175 (the "'175 Patent"); 6,996,177 (the "'177 Patent"); 7,010,039 (the "'039 Patent"); 8,311,112 (the "'112 Patent"); 7,894,529 (the "'529 Patent"); 7,519,230 (the "'230 Patent"); 7,571,450 (the "'450 Patent"); 8,385,426 (the "'426 Patent"); 7,058,227 (the "'227 Patent"); 6,639,944 (the "'944 Patent"); 6,782,054 (the "'2054 Patent"); 7,982,799 (the "'799 Patent"); and 8,442,118 (the "'118 Patent") (collectively, the "Patents-in-Suit"). Defendants Brightcove Inc. and Brightcove Holdings, Inc. (collectively, "Brightcove") infringe each of the patents-in-suit in violation of the patent laws of the United States of America, 35 U.S.C. § 1 *et seq*.

INTRODUCTION

1. Dynamic Data's portfolio of over 1,200 patent assets encompasses core technologies in the field of image and video processing. Dynamic Data's patents arose from the research and development efforts of Koninklijke Philips N.V. ("Philips"). Founded in 1891, for well over a century, Philips pioneered groundbreaking technologies, including compact audio

cassettes, magnetic resonance imaging (MRI) machines, and compact discs.

2. In an effort to facilitate the licensing of Philips' foundational technology, Dynamic Data is pursuing remedies for infringement of its patents in venues throughout the world. Dynamic Data has filed complaints against other companies selling the technologies claimed by Dynamic Data's patent portfolio. Dynamic Data filed patent enforcement actions against Advanced Micro Devices, Inc.,[1] Microsoft Corporation,[2] and Apple Corporation[3] in the Peoples Republic of China before the Specialized Intellectual Property Tribunals in Nanjing and Beijing. In addition, Dynamic Data has filed a patent enforcement action against Apple, Inc. in Düsseldorf, Germany.[4]

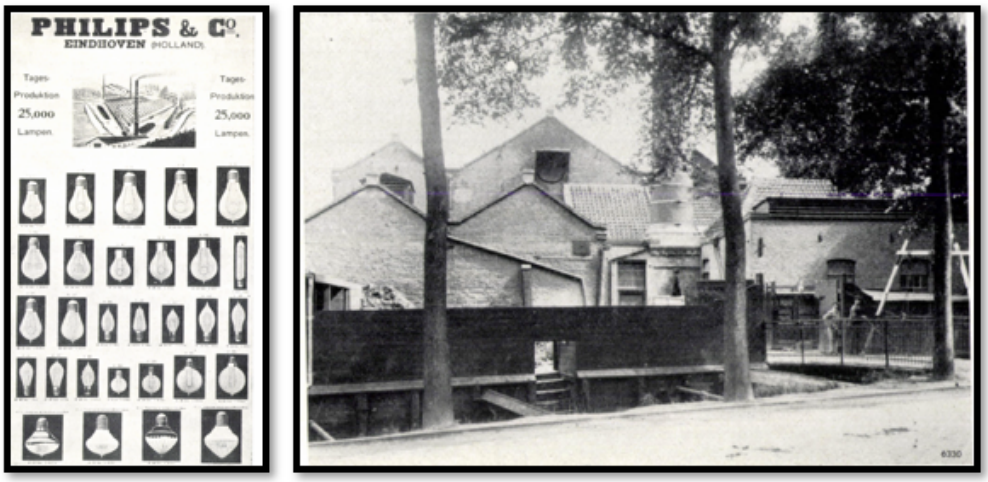
DYNAMIC DATA'S LANDMARK INVENTIONS

3. The groundbreaking inventions in image and video processing taught in the patents-in-suit were pioneered by Philips. Video and image processing were at the heart of Philips' business for over fifty years. In 1891, Philips, then known as Philips & Company, was founded in Eindhoven, Netherlands to manufacture carbon-filament lamps.[5] In the 1920s, Philips began to produce vacuum tubes and small radios, which would augur Philips' later entry into video and audio processing.

[1] Asserting Patent No. CN1266944C (案号: (2019) 京73民初175号) (Case No. (2019) Jing 73 Minchu 175).
[2] Asserting Patent Nos. CN1266944C, CN1329870C, and CN1333373C (案号: (2018) 苏01民初3500号, (2018) 苏01民初3501号, (2018) 苏01民初3502号) (Case Nos. (2018) Su 01 Minchu 3500, (2018) Su 01 Minchu 3501, and (2018) Su 01 Minchu 3502).
[3] Asserting Patent Nos. CN1303818C and CN102027489B (案号: (2019) 京73 民初234/235号) (Case Nos. (2019) Jing 73 Min Chu No. 234 and (2019) Jing 73 Min Chu No. 235).
[4] Asserting Patent No. EP1520409 (Landgericht Düsseldorf).
[5] Gerard O'Regan, A BRIEF HISTORY OF COMPUTING at 99 (2012).

N.A. Halbertsma, *The Birth of a Lamp Factory In 1891*, PHILIPS TECHNICAL REVIEW, Vol. 23 at 230, 234 (1961).

4. In 1962, Philips introduced the first audio cassette tape.[6] A year later, Philips launched a small battery-powered audio tape recorder that used a cassette instead of a loose spool.[7] Philips C-cassette was later used as the first mass storage device for early personal computers in the 1970s and 1980s.



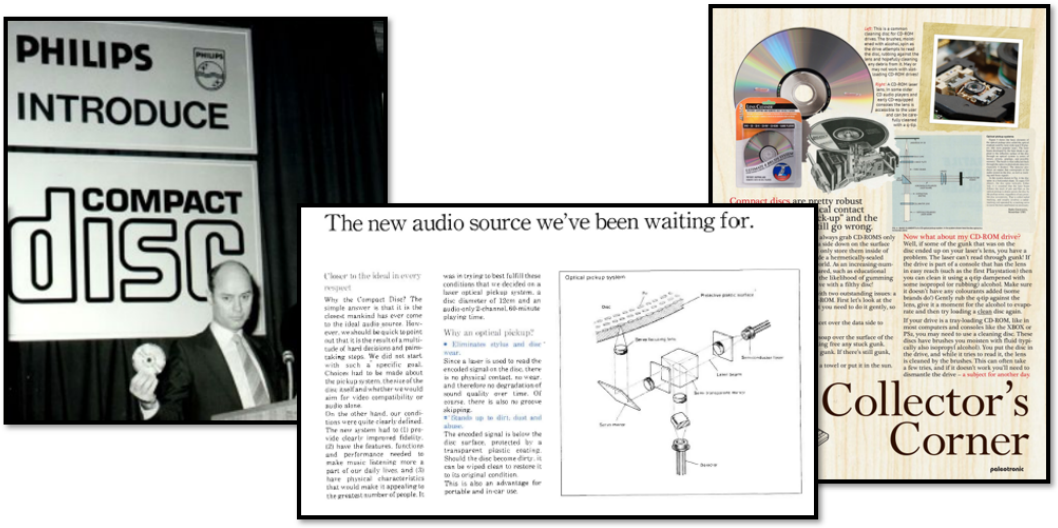
THE ROTARIAN MAGAZINE, Vol. 101 No. 6 at 70 (December 1962) (advertisement showing Philips Norelco device which used cassettes for recording audio for transcription); Fred Chandler,

[6] Gerard O'Regan, PILLARS OF COMPUTING: A COMPENDIUM OF SELECT, PIVOTAL TECHNOLOGY FIRMS at 172 (2015) ("Philips invented the compact cassette for audio storage in 1962.")

[7] Anthony Pollard, GRAMOPHONE: THE FIRST 75 YEARS at 231 (1998).

European Mfrs. Bid For Market Share, BILLBOARD MAGAZINE AT P-6 (April 8, 1967) (image of the Philips EL 3300 battery-operated tape recorder which was released in 1963); Jan Syrjala, *Car Stereo: How Does The Music Sound?,* N.Y. TIMES at 2-M (September 25, 1966) (showing Philips's Norelco Cassette "the Philips device has two tiny reels inside it, with the tape traveling from one to the other").

5. In 1971, Philips demonstrated the world's first videocassette records (VCR). A year later, Philips launched the world's first home video cassette recorder, the N1500. In 1982, Philips teamed with Sony to launch the Compact Disc; this format evolved into the DVD and later Blu-ray, which Philips launched with Sony in 1997 and 2006 respectively.



Hans Peek, Jan Bergmans, Jos Van Haaren, Frank Toolenaar, and Sorin Stan, ORIGINS AND SUCCESSORS OF THE COMPACT DISC: CONTRIBUTIONS OF PHILIPS TO OPTICAL STORAGE at 15 (2009) (showing image of Joop Sinjou of Philips introducing the compact disc in March 1979); Advertisements for Philip's Compact Disc Products (1982).

6. In the late 1990s and early 2000s, Philips pioneered the development of technologies for encoding and decoding of video and audio content. At the time most of the technologies claimed by the patents in Dynamic Data's portfolio were invented, Philips' subsidiary primarily responsible for Philips' work in this field, Philips Semiconductor was the world's sixth

largest semiconductor company.[8] The video encoding technologies developed by Philips Semiconductor enable video streaming on set-top boxes, smartphones, popular gaming consoles, Internet-connected computers, and numerous other types of media streaming devices.

7. Philips Semiconductor dedicated significant research and development resources to advancing the technology of video compression and transmission by reducing file sizes and decreasing the processing resources required to transmit the data.[9] Philips Semiconductor was among the first companies aggressively driving innovation in the field of video processing:

> The late 1980s and early 1990s saw the announcement of several complex, programmable VSPs. Important examples include chips from Matsushita, NTT, Philips [Semiconductors], and NEC. All of these processors were high-performance parallel processors architected from the ground up for real-time video signal processing. . . . The Philips VSP-1 and NEC processor were probably the most heavily used of these chips.[10]

8. Starting in the 1960s Philips pioneered the development of audio and video technologies that would establish itself as a leader in the field that would later develop into the audio and video encoding fields. Continuing Philips' pioneering history in these fields, the patents-in-suit disclose cutting-edge video compression and transmission technologies.

DYNAMIC DATA'S PATENT PORTFOLIO

9. Dynamic Data's patent portfolio includes over 1,200 patent assets, with over 470 issued patents granted by patent offices around the world. Dynamic Data owns numerous patents issued by the United States Patent and Trademark Office, including each of the Patents-in-Suit,

[8] *Company News; Philips in $1 Billion Deal for VLSI Technology*, THE NEW YORK TIMES (May 4, 1999), *available at*: https://www.nytimes.com/1999/05/04/business/company-news-philips-in-1-billion-deal-for-vlsi-technology.html.

[9] HU, YU HEN, PROGRAMMABLE DIGITAL SIGNAL PROCESSORS: ARCHITECTURE, PROGRAMMING, AND APPLICATIONS, at 190 (Dec. 6, 2001) ("Philips Semiconductors developed early dedicated video chips for specialized video processors.").

[10] *Id.* at 191.

The State Intellectual Property Office of the People's Republic of China,[11] the European Patent Office,[12] the German Patent and Trademark Office,[13] the Japan Patent Office,[14] and many other national patent offices.

10. Philips Semiconductor's pioneering work in the area of video processing and encoding has resulted in various inventions that are fundamental to today's video processing technologies. Dynamic Data is the owner by assignment of over 1,200 of these patent assets, which include over 470 patents issued by patent offices around the world.

11. Highlighting the importance of the patents-in-suit is the fact that the patents-in-suit have been cited by over 179 U.S. and international patents and patent applications assigned to a wide variety of the largest companies operating in the field. The patent families of the patents-in-suit have been cited by over 540 U.S. and international patents and patent applications. Dynamic Data's broad portfolio of 1,200 patent asserts have been cited by over 3370 U.S. and international patents and patent applications. The patents-in-suit have been cited by companies such as:

- Samsung Electronics Co., Ltd.[15]
- Qualcomm Inc.[16]
- Google LLC[17]
- Intel Corporation[18]
- International Business Machines Corporation[19]

[11] *See, e.g.,* CN100504925C; CN100438609C; CN1679052B; CN1333373C; CN1329870C; CN1303818C.

[12] *See, e.g.,* European Patent Nos. EP1032921B1; EP1650978B1; EP1213700B1; EP1520409B1.

[13] *See, e.g.,* German Patent Nos. DE60120762; DE50110537; DE60126151; DE60348978; DE602004049357.

[14] *See, e.g.,* Japanese Patent Nos. JP4583924B2; JP5059855B2; JP5153336B2; JP4637585B2.

[15] *See, e.g.*, U.S. Patent Nos. 7,532,764; 7,911,537; 7,990,476; 8,295,551; 8,542,883; 8,559,518; and 8,605,790.

[16] *See, e.g.*, U.S. Patent Nos. 8,265,158; 8,537,283; and 8,649,437.

[17] *See, e.g.*, U.S. Patent Nos. 8,050,324; 8,984,558; and 9,208,573.

[18] *See, e.g.*, U.S. Patent No. 8,405,769.

[19] *See, e.g.*, U.S. Patent Nos. 8,249,371 and 8,917,947.

- Microsoft Corporation[20]
- Sony Corporation[21]
- Marvell International Ltd.[22]
- Mediatek Inc.[23]
- Cisco[24]

THE PARTIES

DYNAMIC DATA TECHNOLOGIES, LLC

12. Dynamic Data Technologies, LLC ("Dynamic Data" or "Plaintiff") is a limited liability company organized under the laws of Delaware.

13. In an effort to obtain compensation for Philips' pioneering work in the fields of video data encoding, decoding, and transmission, Dynamic Data acquired the patents-in-suit along with the several hundred additional issued United States and international Patents.

14. Dynamic Data pursues the reasonable royalties owed for Brightcove's use of the inventions claimed in Dynamic Data's patent portfolio, which primarily arise from Philips' groundbreaking technology, both here in the United States and throughout the world.

BRIGHTCOVE

15. Defendants Brightcove, Inc. and Brightcove Holdings, Inc. are Delaware corporations with their principal place of business at 290 Congress Street, 4th Floor, Boston, MA 02210. Defendants reside in this District because they are incorporated in Delaware. Defendants offer their products and/or services, including those accused herein of infringement, to customers

[20] *See, e.g.*, U.S. Patent Nos. 7,408,986; 7,421,129; and 7,558,320.

[21] *See, e.g.*, U.S. Patent Nos. 7,596,243; 7,620,108; 7,885,335; 7,894,522; 7,894,527; 7,957,466; 8,005,308; 8,059,719; 8,085,986; 8,107,748; and 8,165,205.

[22] *See, e.g.*, U.S. Patent Nos. 8,520,771; 8,542,725; 8,565,325; 8,681,893; 8,817,771; 8,897,393; 8,902,726; 8,908,754; 8,942,312; 8,948,216; and 8,953,661.

[23] *See, e.g.*, U.S. Patent Nos. 8,447,126; 9,563,960; and 9,917,988.

[24] *See, e.g.*, U.S. Patent No. 7,660,471.

and potential customers located in Delaware and in this District. Defendants may be served with process through their registered agent for service in Delaware at The Corporation Trust Company, located at Corporation Trust Center, 1209 Orange Street, Wilmington, Delaware, 19801.

JURISDICTION AND VENUE

16. This action arises under the patent laws of the United States, Title 35 of the United States Code. Accordingly, this Court has exclusive subject matter jurisdiction over this action under 28 U.S.C. §§ 1331 and 1338(a).

17. This Court has personal jurisdiction over Brightcove in this action because Brightcove has committed acts within the State of Delaware giving rise to this action and has established minimum contacts with this forum such that the exercise of jurisdiction over Brightcove would not offend traditional notions of fair play and substantial justice. Brightcove, directly and/or through subsidiaries or intermediaries (including distributors, retailers, and others), has committed and continues to commit acts of infringement in this District by, among other things, offering to sell and selling products and/or services that infringe the patents-in-suit.

18. Venue is proper in this district under 28 U.S.C. §§ 1391(b)-(d) and 1400(b). Brightcove is registered to do business in the State of Delaware and has transacted business in the State of Delaware and has committed acts of direct and indirect infringement in the District of Delaware.

THE ASSERTED PATENTS

U.S. PATENT NO. 8,073,054

19. U.S. Patent No. 8,073,054 entitled, *Unit For And Method Of Estimating A Current Motion Vector*, was filed on December 12, 2002, and claims priority to January 17, 2002. The '3054 Patent is subject to a 35 U.S.C. § 154(b) term extension of 1,162 days. Dynamic Data is the

owner by assignment of all right, title, and interest in the ’3054 Patent. A true and correct copy of the ’3054 Patent is attached hereto as Exhibit 1.

20. The ‘3054 patent discloses novel methods and apparatuses for estimating a current motion vector for a group of pixels of an image.

21. The inventions disclosed in the ’3054 Patent enable motion estimation with a relatively fast convergence in finding the appropriate motion vectors of the motion vector fields by adding a further candidate motion vector to the set of candidate motion vectors.

22. The ’3054 Patent discloses a motion estimation unit comprising a generating unit for generating a set of candidate motion vectors for the group of pixels, with the candidate motion vectors being extracted from a set of previously estimated motion vectors.

23. The ’3054 Patent discloses a motion estimation unit comprising a match error unit for calculating match errors of respective candidate motion vectors.

24. The ’3054 Patent discloses a motion estimation unit comprising a selector for selecting the current motion vector from the candidate motion vectors by means of comparing the match errors of the respective candidate motion vectors, characterized in that the motion estimation unit is arranged to add a further candidate motion vector to the set of candidate motion vectors by calculating the further candidate motion vector on basis of a first motion vector and a second motion vector, both belonging to the set of previously estimated motion vectors.

25. The ’3054 Patent discloses a motion estimation unit that calculates the further candidate motion vector on basis of the first motion vector and the second motion vector, with the first motion vector belonging to a first forward motion vector field and the second motion vector belonging to a second forward motion vector field, with the first forward motion vector field and the second forward motion vector field being different.

26. The ’3054 Patent discloses a motion estimation unit that arranges to calculate the further candidate motion vector by means of calculating a difference between the second motion vector and the first motion vector.

27. The ’3054 Patent family has been cited by 24 patents and patent applications as relevant prior art. Specifically, patents issued to the following companies have cited the ‘3054 patent family as relevant prior art:

- Canon Inc.
- Huawei Technologies, Ltd.
- Imagination Technologies Ltd.
- MediaTek Inc.
- Panasonic Corp.
- Samsung Electronics Co., Ltd.
- Siemens Healthcare GmbH
- Tencent Technology (Shenzhen) Co., Ltd.

U.S. PATENT NO. 6,774,918

28. U.S. Patent No. 6,774,918 entitled, *Video Overlay Processor with Reduced Memory And Bus Performance Requirements*, was filed on June 28, 2000. The ‘918 Patent is subject to a 35 U.S.C. § 154(b) term extension of 591 days. Dynamic Data is the owner by assignment of all right, title, and interest in the ‘918 Patent. A true and correct copy of the ‘918 Patent is attached hereto as Exhibit 2.

29. The ‘918 Patent claims specific methods and systems for providing an overlay such as a cursor in an on-screen display in a consumer electronic device. On-screen display (OSD) data for generating an image on a display device are downloaded to an OSD unit on an integrated circuit.

30. The ‘918 Patent discloses downloading on-screen display (OSD) data for generating an image on a display device.

31. The ‘918 Patent further discloses downloading the on-screen display (OSD) data in segments separated by gaps.

32. The ‘918 Patent further discloses, during a gap in downloading the on-screen display data, downloading an amount of overlay data for generating an overlay on the image generated on a display device.

33. Further, the ‘918 Patent discloses that the overlay data downloaded during a gap comprises a portion of the overlay data.

34. The inventions disclosed in the ‘918 Patent improve the operation and efficiency of computer components because only a portion of the overlay data is downloaded during each burst gap, thus reducing the amount of memory needed to store the overlay data. The inventions disclosed in the ‘918 Patent further eliminate the requirement that on-chip memory be large enough to hold the data needed for an entire overlay. Instead, only one line or a part of one line of the overlay needs to be stored on-chip.

35. The ‘918 Patentclaims a technical solution to a problem unique to video processing.

36. The ‘918 Patent family has been cited by eleven United States and international patents and patent applications as relevant prior art. Specifically, patents issued to the following companies have all cited the ‘918 Patent family as relevant prior art:

- Realtek Semiconductor Corp.
- Samsung Electronics Co., Ltd.
- Technicolor S.a.
- AT&T Inc.

U.S. PATENT NO. 6,996,175

37. U.S. Patent No. 6,996,175 entitled, *Motion Vector Estimation*, was filed on December 7, 1999. The ’175 Patent claims priority pursuant to 35 U.S.C. § 119(a)-(d) to European Patent Applications 99201556.0 and 98204149.3. *See Notice of Allowance* at 1, U.S. PATENT

APPL. SER. NO. 09/455,662 (June 3, 2005) (identifying the claim or priority under 35 U.S.C. § 119(a)-(d)). The '175 Patent has a term which ends "twenty years from the filing date of the application in the United States [December 7, 1999]." MANUAL OF PATENT EXAMINING PROCEDURE ("MPEP") § 2701.III.

38. Dynamic Data is the owner by assignment of all right, title, and interest in the '175 Patent. A true and correct copy of the '175 Patent is attached hereto as Exhibit 3.

39. The '175 Patent discloses novel methods and systems for recursive motion vector estimation. The inventions disclosed in the '175 Patent enable methods and systems where candidate vectors are generated from stored vectors and one of the candidate vectors is selected (the selected vector). The selected vector is then used to generate several test vectors. Finally, one of the test vectors is used to generate an output vector.

40. The inventions disclosed in the '175 Patent teach a device that performs motion estimation to significantly improve the performance of the device with respect to (1) coding efficiency, and (2) the perceptual quality of the coded pictures. Further, the '175 Patent discloses a system wherein recursive motion vector estimation keeps the computation load in a reasonably low range.

41. In one embodiment of the '175 Patent, an improvement to motion estimation is performed wherein a difference between the output and the input of the enhancement module gives a local information on the trend of the motion.

42. The inventions disclosed in the '175 Patent enable post processing to be done inside the recursion loop of any recursive motion estimation algorithm instead of outside the recursion loop, the convergence of the recursive motion estimation algorithm is speeded up.

43. The ’175 Patent, in one embodiment, discloses a method of displaying information on a display device wherein being switched from the first one of the services to the second one of the services, with the data-element and the second data-element being mutually semantically related and a second step of rendering to calculate the output image to be displayed on the display device, on the basis of the second data-element selected by the filter is performed.

44. The ’175 Patent family has been cited by 21 patents and patent applications as relevant prior art. Specifically, patents issued to the following companies have cited the ’175 Patent family as relevant prior art.

- Sony Corporation
- Samsung Electronics Co., Ltd.
- International Business Machines Corp.
- Realtek Semiconductor Corp.
- Primax Electronics Limited

U.S. PATENT NO. 6,996,177

45. U.S. Patent No. 6,996,177 entitled, *Motion Estimation*, was filed on July 24, 2000, and claims priority to August 22, 1999. The ’177 Patent is subject to a 35 U.S.C. § 154(b) term extension of 1,103 days. Dynamic Data is the owner by assignment of all right, title, and interest in the ’177 Patent. A true and correct copy of the ’177 Patent is attached hereto as Exhibit 4.

46. The ’177 Patent claims specific methods and devices for motion estimation and motion-compensated picture signal processing.

47. The ’177 Patent discloses a motion vector estimation method and device that carries out a block-based motion vector estimation process that involves comparing a plurality of candidate vectors to determine block-based motion vectors.

48. The ’177 Patent discloses a motion vector estimation method and device that determines at least a most frequently occurring block-based motion vector.

49. The ’177 Patent discloses a motion vector estimation method and device that carries out a global motion vector estimation process using at least the most frequently occurring block-based motion vector to obtain a global motion vector.

50. The ’177 Patent discloses a motion vector estimation method and device that applies the global motion vector as a candidate vector to the block-based motion vector estimation process.

51. The inventions disclosed in the ’177 Patent improve the operation of the computer components necessary to the performance of picture signal processing by reducing the load on the central processing unit.

52. The ’177 Patent family has been cited by 64 United States and international patents and patent applications as relevant prior art. Specifically, patents issued to the following companies have cited the ’177 Patent family as relevant prior art:

- Qualcomm Incorporated
- LG Electronics
- Microsoft Corporation
- Samsung Electronics Co., Ltd.
- VIXS Systems Incorporated
- General Instrument Corporation

- Alphabet, Inc.
- Pixelworks, Inc.
- Himax technologies, Inc.

U.S. PATENT NO. 7,010,039

53. U.S. Patent No. 7,010,039 entitled, *Motion Estimator for Reduced Halos in MC Up-Conversion*, was filed on May 15, 2001, and claims priority to May 18, 2000. The '039 Patent is subject to a 35 U.S.C. § 154(b) term extension of 768 days. Dynamic Data is the owner by assignment of all right, title, and interest in the '039 Patent. A true and correct copy of the '039 Patent is attached hereto as Exhibit 5.

54. The '039 Patent claims specific methods and apparatuses detecting motion at a temporal intermediate position between previous and next images. The inventions disclosed in the '039 Patent solve a problem wherein an estimator estimating motion between two successive pictures from a video sequence cannot perform well in areas where covering or uncovering occurs.

55. The '039 Patent solves this problem by carrying out the optimization at the temporal position of the next image in covering areas and at the temporal position of the previous image in uncovering areas.

56. The '039 Patent discloses a method and apparatus for detecting motion at a temporal intermediate position between previous and next images.

57. The '039 Patent discloses the use of a criterion function for selecting and optimizing candidate vectors.

58. The '039 Patent further discloses a criterion function that depends on data from both previous and next images and in which the optimizing is carried out at the temporal intermediate position in non-covering and non-uncovering areas, characterized in that the

optimizing is carried out at the temporal position of the next image in covering areas and at the temporal position of the previous image in uncovering areas.

59. The ’039 Patent family has been cited by 56 United States and international patents and patent applications as relevant prior art. Specifically, patents issued to the following companies have cited the ’039 Patent family as relevant prior art:

- Qualcomm Incorporated
- Panasonic Corporation
- Samsung Electronics Co., Ltd.
- Matsushita Electric Industrial Co., Ltd.
- Sharp Kabushiki Kaisha
- Integrated Device Technology, Inc.
- Zoran Corporation
- Sony Corporation

U.S. PATENT NO. 8,311,112

60. U.S. Patent No. 8,311,112 entitled, *System And Method For Video Compression Using Predictive Coding*, was filed on December 31, 2008. The ’112 Patent is subject to a 35 U.S.C. § 154(b) term extension of 847 days. Dynamic Data is the owner by assignment of all right, title, and interest in the ’112 Patent. A true and correct copy of the ’112 Patent is attached hereto as Exhibit 6.

61. The ’112 Patent discloses novel methods and systems for video compression.

62. The ’112 Patent discloses novel technologies for video compression that perform predictive coding on a macroblock of a video frame such that a set of pixels of the macroblock is coded using some of the pixels from the same video frame as reference pixels and the rest of the macroblock is coded using reference pixels from at least one other video frame.

63. The ’112 Patent discloses a system for video compression comprising an intra-frame coding unit configured to perform predictive coding on a set of pixels of a macroblock of

pixels using a first group of reference pixels, the macroblock of pixels and the first group of reference pixels being from a video frame.

64. The ’112 Patent discloses a system for video compression comprising an inter-frame coding unit configured to perform predictive coding on the rest of the macroblock of pixels using a second group of reference pixels, the second group of reference pixels being from at least one other video frame.

65. The ’112 Patent family has been cited by 29 patents and patent applications as relevant prior art. Specifically, patents issued to the following companies have cited the ’112 Patent family as relevant prior art:

- British Broadcasting Corporation
- Google LLC
- Megachips Corp.
- Olympus Corp.
- Samsung Electronics Co., Ltd.
- Sony Corporation
- Toshiba Corporation

U.S. PATENT NO. 7,894,529

66. U.S. Patent No. 7,894,529 entitled, *Method And Device For Determining Motion Vectors*, was filed on June 1, 2006, and claims priority to June 3, 2005. The ’529 Patent is subject to a 35 U.S.C. § 154(b) term extension of 1,301 days. Dynamic Data is the owner by assignment of all right, title, and interest in the ’529 Patent. A true and correct copy of the ’529 Patent is attached hereto as Exhibit 7.

67. The ’529 Patent discloses novel methods and apparatuses for determining motion vectors that are each assigned to individual image regions.

68. The inventions disclosed in the ’529 Patent enable an increase in the resolution of video and image signals during the motion estimation process.

69. The ’529 Patent discloses a method for determining motion vectors which are assigned to individual image regions of an image.

70. The ’529 Patent discloses a method wherein an image is subdivided into a number of image blocks, and a motion estimation technique is implemented to assign at least one motion vector to each of the image blocks where a modified motion vector is generated for at least a first image block.

71. The ’529 Patent discloses a method that determines at least a second image block through which the motion vector assigned to the first image block at least partially passes.

72. The ’529 Patent discloses a method that generates the modified motion vector as a function of a motion vector assigned to at least the second image block.

73. The ’529 Patent discloses a method that assigns the modified motion vector as the motion vector to the first image block.

74. The ’529 Patent family has been cited by 11 patents and patent applications as relevant prior art. Specifically, patents issued to Fujifilm Corp., Socionext Inc., and Samsung Electronics Co., Ltd. have cited the ’529 Patent family as relevant prior art.

U.S. PATENT NO. 7,519,230

75. U.S. Patent No. 7,519,230 entitled, *Background Motion Vector Detection*, was filed on December 16, 2003, and claims priority to January 23, 2003. The ’230 Patent is subject to a 35 U.S.C. § 154(b) term extension of 685 days. Dynamic Data is the owner of all right, title, and interest in the ’230 Patent. A true and correct copy of the ’230 Patent is attached hereto as Exhibit 8.

76. The ’230 Patent claims specific methods and systems to select a background motion vector for a pixel in an occlusion region of an image.

77. The ’230 Patent discloses systems and methods determine the correct motion vector in occlusion regions, thereby reducing or eliminating artifacts of motion compensated image rate converters, which are referred to as “halos” in the display of video images.

78. The ’230 Patent claims a method of selecting a background motion vector for a pixel in an occlusion region of an image comprising computing a model-based motion vector for the pixel on basis of a motion model being determined on basis of a part of a motion vector field of the image.

79. The ’230 Patent claims a method of selecting a background motion vector for a pixel in an occlusion region of an image comprising comparing the model-based motion vector with each of the motion vectors of the set of motion vectors.

80. The ’230 Patent claims a method of selecting a background motion vector for a pixel in an occlusion region of an image comprising selecting a particular motion vector of the set of motion vectors on basis of the comparing and for assigning the particular motion vector as the background motion vector.

81. The ’230 Patent family has been cited by 56 United States and international patents and patent applications as relevant prior art. Specifically, patents issued to the following companies have cited the ’230 Patent family as relevant prior art:

- Sony Corporation
- Fujitsu Ltd.
- Motorola Solutions Inc.
- Nokia Oyj
- Qualcomm Inc.
- Samsung Electronics Co., Ltd.
- Toshiba Corporation
- JVC Kenwood Corporation
- Mediatek, Inc.

U.S. PATENT NO. 7,571,450

82. U.S. Patent No. 7,571,450 entitled, *System For And Method Of Displaying Information*, was filed on February 12, 2003, and claims priority to March 11, 2002. The '450 Patent is subject to a 35 U.S.C. § 154(b) term extension of 846 days. Dynamic Data is the owner by assignment of all right, title, and interest in the '450 Patent. A true and correct copy of the '450 Patent is attached hereto as Exhibit 9.

83. The '450 Patent discloses novel methods and systems for displaying information. The inventions disclosed in the '450 Patent enable methods and systems wherein a user does not need to make a new selection after being switched from one service to a second service.

84. The inventions disclosed in the '450 Patent permit a user of an information display system to have selections made on a first service also presented when the user switches to a second service without requiring the user to browse through the menus to define the type of information to be displayed a second time.

85. In one embodiment of the '450 Patent, the user selection being made on the basis of the provided options while the first service was selected is use to select the appropriate data elements of the stream of the second service.

86. The inventions disclosed in the '450 Patent enable various content sources to share similar information models.

87. The '450 Patent, in one embodiment, discloses a method of displaying information on a display device wherein receiving a transport stream comprises services, with the services having elementary streams of video and of data elements.

88. The '450 Patent, in one embodiment, discloses a method of displaying information on a display device wherein user actions of making a user selection of a type of information to be displayed on the device are received.

89. The ’450 Patent, in one embodiment, discloses a method of displaying information on a display device wherein filtering to select a data element of a first one of the services on the basis of the user selection is performed.

90. The ’450 Patent, in one embodiment, discloses a method of displaying information on a display device wherein rendering to calculate an output image to be displayed on the display device, on the basis of the first data element selected by the filer is performed.

91. The ’450 Patent, in one embodiment, discloses a method of displaying information on a display device wherein switching from the first one of the services to a second one of the services, characterized in comprising a second step of filtering to select a second data-element of the second one of the services, on basis of the user selection is performed.

92. The ’450 Patent, in one embodiment, discloses a method of displaying information on a display device wherein being switched from the first one of the services to the second one of the services, with the data-element and the second data-element being mutually semantically related and a second step of rendering to calculate the output image to be displayed on the display device, on basis of the second data-element selected by the filter is performed.

93. The ’450 Patent family has been cited by ten patents and patent applications as relevant prior art. Specifically, patents issued to AT&T Intellectual Property I LP, Nokia Oyj, Samsung Electronics Co., Ltd., and ZTE Corporation have all cited the ‘450 Patent family as relevant prior art.

U.S. PATENT NO. 8,385,426

94. U.S. Patent No. 8,385,426 entitled, Method For A Mosaic Program Guide, was filed on December 12, 2003, and claims priority to December 16, 2002. The ’426 Patent is subject to a 35 U.S.C. § 154(b) term extension of 1,974 days. Dynamic Data is the owner of all right, title,

and interest in the ’426 Patent. A true and correct copy of the ’426 Patent is attached hereto as Exhibit 10.

95. The ’426 Patent claims specific methods and systems to generate a mosaic program guide.

96. The ’426 Patent discloses methods and systems of providing mosaic program guides by generating I frames from a coded video bit stream, placing each I frame into mosaic windows, and combining the mosaic windows into a mosaic video frame.

97. The ’426 Patent discloses technology that enables providers of encoded video content to save significant resources by streamlining the process of presenting mosaic program guides.

98. The ’426 Patent claims a method of generating a mosaic program guide comprising generating I frames from a coded video bit stream by a video decoder of a receiver.

99. The ’426 Patent claims a method of generating a mosaic program guide comprising placing each I frame into one of a multiplicity of mosaic windows by the receiver.

100. The ’426 Patent claims a method of generating a mosaic program guide comprising combining in the receiver the multiplicity of mosaic windows into a mosaic video frame.

101. The ’426 Patent family has been cited by 85 United States and international patents and patent applications as relevant prior art. Specifically, patents issued to the following companies have cited the ’426 Patent family as relevant prior art:

- ActiveVideo Networks Inc.
- ARRIS Group Inc.
- Cox Communications Inc.
- Echostar Broadcasting Holding Corp.
- Google LLC
- DIVX LLC
- Huawei Technologies Co., Ltd.
- Konica Minolta Technology USA Inc.

- LG Electronics Inc.
- Panasonic Corp.
- Qualcomm Inc.
- Samsung Electronics Co., Ltd.
- Sony Corp.
- Verizon Patent and Licensing Inc.
- Charter Communications, Inc.
- Tivo Corporation

U.S. PATENT NO. 7,058,227

102. U.S. Patent No. 7,058,227 entitled, *Problem Area Location In An Image Signal*, was filed on July 17, 2002, and claims priority to August 21, 1998. The '227 Patent is subject to a 35 U.S.C. § 154(b) term extension of 723 days. Dynamic Data is the owner by assignment of all right, title, and interest in the '227 Patent. A true and correct copy of the '227 Patent is attached hereto as Exhibit 11.

103. The '227 Patent discloses novel methods and systems for detecting occlusion and reducing halo effects in motion compensated pictures.

104. The '227 Patent further discloses a method and device for interpolating images between existing images.

105. The '227 Patent discloses technologies capable of adapting the interpolation strategy depending on a segmentation of the image in various areas.

106. The '227 Patent discloses a method of locating problem areas in an image signal that includes estimating a motion vector field for the image signal.

107. The '227 Patent discloses a method of locating problem areas in an image signal that includes detecting edges in the motion vectors field.

108. The ’227 Patent discloses a method of locating problem areas in an image signal that includes comparing edge locations in successive field periods to identify both foreground and background.

109. The ’227 Patent family has been cited by 70 patents and patent applications as relevant prior art. Specifically, patents issued to the following companies have cited the ’227 Patent family as relevant prior art:

- Integrated Device Technology, Inc.
- Qualcomm Inc.
- MediaTek Inc.
- Mitsubishi Denki Kabushiki Kaisha
- Panasonic Corporation
- Samsung Electronics Co., Ltd.
- Sony Corporation
- Toshiba Corporation
- Pixelworks, Inc.
- Google, LLC
- Avid Technology, Inc.

U.S. PATENT NO. 6,639,944

110. U.S. Patent No. 6,639,944 entitled, *Sub-Pixel Accurate Motion Vector Estimation And Compensated Interpolation*, was filed on April 26, 2000, and claims priority to April 26, 1999. Dynamic Data is the owner by assignment of all right, title, and interest in the ’944 Patent. A true and correct copy of the ’944 Patent is attached hereto as Exhibit 12.

111. The ’944 Patent discloses novel methods and systems for sub-pixel accurate motion vector estimation and motion-compensated interpolation or prediction.

112. The inventions disclosed in the ’944 Patent enable higher accuracy motion estimation at a lower cost through improvements in motion vector estimation and motion-compensated interpolation.

113. The ’944 Patent discloses a method of generating an intermediate image using sub-pixel accurate motion vectors having vector components that may have non-integer values, from first and second images having a given mutual temporal distance, the intermediate image being at a fractional distance from said first image, said fractional distance being a fraction of said given mutual temporal distance.

114. The ’944 Patent discloses a method that includes deriving first and second vectors from said sub-pixel accurate motion vectors.

115. The ’944 Patent discloses a method that includes generating an intermediate image by combining first positions in a first image shifted over first vectors and second positions in said second image shifted over second vectors.

116. The ’944 Patent discloses a method that includes deriving first and second vectors from sub-pixel accurate motion vectors by multiplying the vector components of the sub-pixel accurate motion vectors by a fraction to obtain fractional vector components.

117. The ’944 Patent discloses a method that includes deriving first and second vectors from sub-pixel accurate motion vectors by rounding the fractional vector components to obtain vector components of the first vectors, which have only integer vector components.

118. The ’944 Patent discloses a method that includes deriving first and second vectors from sub-pixel accurate motion vectors by subtracting the first vector from the candidate vector to obtain the second vector, whereby the second vectors have vector components that, depending on the candidate vector and the fraction, may have non-integer values.

119. The ’944 Patent family has been cited by 23 patents and patent applications as relevant prior art. Specifically, patents and patent applications issued to the following companies

have cited the ’ ‘944 Patent family as relevant prior art: Himax Media Solutions, Inc.; Cyberlink Corp.; and Marvell International Ltd.

U.S. PATENT NO. 6,782,054

120. U.S. Patent No. 6,782,054 entitled, *Method And Apparatus For Motion Vector Estimation*, was filed on April 20, 2001. The ’2054 Patent is subject to a 35 U.S.C. § 154(b) term extension of 485 days. Dynamic Data is the owner by assignment of all right, title, and interest in the ’2054 Patent. A true and correct copy of the ’2054 Patent is attached hereto as Exhibit 13.

121. The ’2054 Patent discloses novel methods and systems for motion estimation in a sequence of moving video pictures.

122. The inventions disclosed in the ’2054 Patent increase the speed of convergence of motion vectors to improve the convergence process.

123. The ’2054 Patent discloses a method to enhance motion estimation that includes selecting a displacement vector as a best motion vector for a region in a field from a plurality of at least two candidate motion vectors by applying an error function to each of said plural candidate motion vectors, wherein the candidate motion vector with the least error is selected as the displacement vector for the region in the field.

124. The ’2054 Patent discloses a method to enhance motion estimation that includes an error function comprising a first penalty term that depends on a type of the candidate motion vector and a second penalty term that depends on the position and size of the candidate motion vector.

125. The ’2054 Patent family has been cited by 113 patents and patent applications as relevant prior art. Specifically, patents and patent applications issued to the following companies have cited the ’2054 Patent family as relevant prior art:

- Samsung Electronics Co., Ltd.
- Sony Corporation

- MediaTek Inc.
- Qualcomm Incorporated
- Micronas GmbH
- Google Inc.
- Thomson Licensing
- Brightscale, Inc.
- Genesis Microchip Inc.
- STMicroelectronics SA
- Toshiba Corp.
- Micron Technology, Inc.
- Realtek Semiconductor Corp.
- Intel Corporation

U.S. PATENT NO. 7,982,799

126. U.S. Patent No. 7,982,799 entitled, *Method And Device For Interpolation Of An Image Information Value For Pixel Of An Interline*, was filed on December 29, 2006, and claims priority to December 30, 2005. The '799 Patent is subject to a 35 U.S.C. § 154(b) term extension of 1,233 days. Dynamic Data is the owner by assignment of all right, title, and interest in the '799 Patent. A true and correct copy of the '799 Patent is attached hereto as Exhibit 14.

127. The '799 Patent discloses novel methods and systems for interpolating an image information value for a pixel of an interline situated between two original image lines in an image.

128. The inventions disclosed in the '799 Patent reduce or prevent ambiguities in the determination of an optimal image direction by adding a single direction values of several adjacent pixels.

129. The '799 Patent discloses a method for interpolation of an image information value for a pixel of an interline that includes selecting from a number of image directions, to each of which a direction quality value is assigned, a direction of interpolation by comparing the direction quality values.

130. The '799 Patent discloses a method for interpolation of an image information value for a pixel of an interline that includes determining the image information value being interpolated

in dependence on image information values assigned to pixels lying adjacent to the pixel being interpolated in the direction of interpolation.

131. The ’799 Patent discloses a method for interpolation of an image information value for a pixel of an interline that includes ascertaining a direction quality value for an image direction by selecting a pixel group having at least two pixels.

132. The ’799 Patent discloses a method for interpolation of an image information value for a pixel of an interline that includes ascertaining a direction quality value for an image direction by determining a single direction quality value for each pixel of the pixel group, the single direction quality value being dependent on image information values assigned to image regions lying adjacent to the particular pixel of the group in the image direction.

133. The ’799 Patent discloses a method for interpolation of an image information value for a pixel of an interline that includes ascertaining a direction quality value for an image direction by creating the direction quality value as a function of the single direction quality values of the pixel group.

134. The ’799 Patent family has been cited by multiple patents and patent applications as relevant prior art. Specifically, patents and patent applications issued to the following companies have cited the ’799 Patent family as relevant prior art:

- NEC Corporation
- Intel Corporation
- Qualcomm, Inc.
- MediaTek, Inc.

U.S. PATENT NO. 8,442,118

135. U.S. Patent No. 8,442,118 entitled, *Calculating Transformation Parameters For Image Processing,* was filed on May 19, 2006, and claims priority to May 31, 2005. The ’118 Patent is subject to a 35 U.S.C. § 154(b) term extension of 1,297 days. Dynamic Data is the owner

by assignment of all right, title, and interest in the ’118 Patent. A true and correct copy of the ’118 Patent is attached hereto as Exhibit 15.

136. The ’118 Patent discloses novel methods and systems for obtaining transformation parameters.

137. The inventions disclosed in the ’118 Patent reduce the processing capacity associated with obtaining transformation parameters from a vector field.

138. The ’118 Patent discloses a method of obtaining transformation parameters from a vector field with an image processing device that includes receiving a video image from a video source, the video image having consecutive video frames.

139. The ’118 Patent discloses a method of obtaining transformation parameters from a vector field with an image processing device that includes obtaining, with a processor, the vector field from the video image.

140. The ’118 Patent discloses a method of obtaining transformation parameters from a vector field with an image processing device that includes projecting, with the processor, the vector field on at least one axis.

141. The ’118 Patent discloses a method of obtaining transformation parameters from a vector field with an image processing device that includes deriving, with the processor, the transformation parameters from the projection of the vector field.

142. The ’118 Patent discloses a method of obtaining transformation parameters from a vector field with an image processing device that includes compressing, with the processor, the video image using the transformation parameters.

143. The ’118 Patent discloses a method of obtaining transformation parameters from a vector field with an image processing device that includes storing the compressed video image on a non-transitory computer-readable medium.

144. The ’118 Patent family has been cited by several patents and patent applications as relevant prior art. Specifically, patents and patent applications issued to the Samsung Electronics Co., Ltd. and Spreadtrum Communications (Shanghai) Co., Ltd. have cited the ’118 Patent family as relevant prior art.

COUNT I
INFRINGEMENT OF U.S. PATENT NO. 8,073,054

145. Dynamic Data references and incorporates by reference the preceding paragraphs of this Complaint as if fully set forth herein.

146. Brightcove designs, makes, uses, sells, and/or offers for sale in the United States products and/or services for estimating a current motion vector for a group of pixels of an image.

147. Brightcove designs, makes, sells, offers to sell, imports, and/or uses products and/or services that encode content in compliance with the H.265 standard including at least the following products and services: Brightcove Video Cloud, Brightcove Enterprise Video Suite, Brightcove Live, Brightcove OTT Flow, and Brightcove Zencoder (collectively, the “Brightcove ’3054 Product(s)”).

148. One or more Brightcove subsidiaries and/or affiliates use the Brightcove ’3054 Products in regular business operations.

149. One or more of the Brightcove ’3054 Products include technology for estimating a current motion vector for a group of pixels of an image.

150. Brightcove has directly infringed and continues to directly infringe the ’3054 patent by, among other things, making, using, offering for sale, and/or selling technology for estimating a current motion vector for a group of pixels of an image, including but not limited to the Brightcove ’3054 Products.

151. One or more of the Brightcove ’3054 Products enable motion estimation with a relatively fast convergence in finding the appropriate motion vectors of the motion vector fields by adding a further candidate motion vector to the set of candidate motion vectors.

152. One or more of the Brightcove ’3054 Products include a motion estimation unit comprising a generating unit for generating a set of candidate motion vectors for the group of pixels, with the candidate motion vectors being extracted from a set of previously estimated motion vectors.

153. One or more of the Brightcove ’3054 Products include a motion estimation unit comprising a match error unit for calculating match errors of respective candidate motion vectors.

154. One or more of the Brightcove ’3054 Products include a motion estimation unit comprising a selector for selecting the current motion vector from the candidate motion vectors by means of comparing the match errors of the respective candidate motion vectors, characterized in that the motion estimation unit is arranged to add a further candidate motion vector to the set of candidate motion vectors by calculating the further candidate motion vector on basis of a first motion vector and a second motion vector, both belonging to the set of previously estimated motion vectors.

155. One or more of the Brightcove ’3054 Products include a motion estimation unit that calculates the further candidate motion vector on basis of the first motion vector and the second motion vector, with the first motion vector belonging to a first forward motion vector field and the

second motion vector belonging to a second forward motion vector field, with the first forward motion vector field and the second forward motion vector field being different.

156. One or more of the Brightcove ’3054 Products include a motion estimation unit that arranges to calculate the further candidate motion vector by means of calculating a difference between the second motion vector and the first motion vector.

157. The Brightcove ’3054 Products are available to businesses and individuals throughout the United States.

158. The Brightcove ’3054 Products are provided to businesses and individuals located in Delaware.

159. By making, using, testing, offering for sale, and/or selling products and services for estimating a current motion vector for a group of pixels of an image, including but not limited to the Brightcove ’3054 Products, Brightcove has injured Dynamic Data and is liable to the Plaintiff for directly infringing one or more claims of the ’3054 patent, including at least claim 1 pursuant to 35 U.S.C. § 271(a).

160. Brightcove also indirectly infringes the ’3054 patent by actively inducing infringement under 35 USC § 271(b).

161. Brightcove has had knowledge of the ’3054 patent since at least service of this Complaint or shortly thereafter, and Brightcove knew of the ’3054 patent and knew of its infringement, including by way of this lawsuit.

162. Brightcove intended to induce patent infringement by third-party customers and users of the Brightcove ’3054 Products and had knowledge that the inducing acts would cause infringement or was willfully blind to the possibility that its inducing acts would cause infringement. Brightcove specifically intended and was aware that the normal and customary use

of the accused products would infringe the ’3054 patent. Brightcove performed the acts that constitute induced infringement, and would induce actual infringement, with knowledge of the ’3054 patent and with the knowledge that the induced acts would constitute infringement. For example, Brightcove provides the Brightcove ’3054 Products that have the capability of operating in a manner that infringe one or more of the claims of the ‘3054 patent, including at least claim 1, and Brightcove further provides documentation and training materials that cause customers and end users of the Brightcove ’3054 Products to utilize the products in a manner that directly infringe one or more claims of the ’3054 patent.[25] By providing instruction and training to customers and end-users on how to use the Brightcove ‘3054 Products in a manner that directly infringes one or more claims of the ’3054 patent, including at least claim 1, Brightcove specifically intended to induce infringement of the ’3054 patent. Brightcove engaged in such inducement to promote the sales of the Brightcove ’3054 Products, e.g., through Brightcove user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the ’3054 patent. Accordingly, Brightcove has induced and continues to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the ’3054 patent, knowing that such use constitutes infringement of the ’3054 patent.

[25] *See, e.g.*, David Sayed, *How To Get Started With UHD In Zencoder*, BRIGHTCOVE BLOG (May 2, 2016), *available at*: https://www.brightcove.com/en/blog/2016/05/how-get-started-uhd-zencoder; *Zencoder: HEVC/H.265 Guide*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/zencoder-hevch265-guide; *Zencoder Encoding Settings: Video*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/zencoder-encoding-settings-video; *Zencoder Encoding Settings: Format and Codecs*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/zencoder-encoding-settings-format-and-codecs; *Brightcove Zencoder: Complete Cloud Service For Video Encoding*, BRIGHTCOVE DATASHEET (2019); and Nathan Veer, *Conquer Live Streaming With An All-in-One Solution*, BRIGHTCOVE WEBINAR (last visited June 2019), *available at*: https://www.brightcove.com/en/webinars?videoId=6008933337001.

163. The ’3054 patent is well-known within the industry as demonstrated by multiple citations to the ’3054 patent in published patents and patent applications assigned to technology companies and academic institutions. Brightcove is utilizing the technology claimed in the ’3054 patent without paying a reasonable royalty. Brightcove is infringing the ’3054 patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

164. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the ’3054 patent.

165. As a result of Brightcove’s infringement of the ’3054 patent, Dynamic Data has suffered monetary damages, and seeks recovery in an amount adequate to compensate for Brightcove’s infringement, but in no event less than a reasonable royalty for the use made of the invention by Brightcove together with interest and costs as fixed by the Court.

COUNT II
INFRINGEMENT OF U.S. PATENT NO. 6,774,918

166. Dynamic Data references and incorporates by reference the preceding paragraphs of this Complaint as if fully set forth herein.

167. Brightcove designs, makes, uses, sells, and/or offers for sale in the United States products and/or services for image processing.

168. Brightcove designs, makes, sells, offers to sell, imports, and/or uses products and/or services that decode content in compliance with the H.265 standard including at least the following products and services: Brightcove Video Cloud, Brightcove Enterprise Video Suite, Brightcove Player, and Brightcove OTT Flow (collectively, the “Brightcove ’918 Product(s)”).

169. One or more Brightcove subsidiaries and/or affiliates use the Brightcove ’918 Products in regular business operations.

170. One or more of the Brightcove ’918 Products include technology for image processing.

171. The Brightcove ’918 Products are available to businesses and individuals throughout the United States.

172. The Brightcove ’918 Products are provided to businesses and individuals located in Delaware.

173. Brightcove has directly infringed and continues to directly infringe the ’918 Patent by, among other things, making, using, offering for sale, and/or selling video processing technology, including but not limited to the Brightcove ’918 Products.

174. One or more of the Brightcove ’918 Products provide an overlay such as a cursor in an on-screen display in a consumer electronic device.

175. One or more of the Brightcove ’918 Products enable downloading on-screen display (OSD) data for generating an image on a display device.

176. One or more of the Brightcove ’918 Products download the on-screen display (OSD) data in segments separated by gaps.

177. One or more of the Brightcove ’918 Products download, during a gap in downloading the on-screen display data, an amount of overlay data for generating an overlay on the image generated on a display device.

178. One or more of the Brightcove ’918 Products contain overlay data downloaded during a gap that comprises a portion of the overlay data.

179. The Brightcove ’918 Products comprise a computer-usable medium having computer-readable program code embodied therein for causing a video processor to download on-screen display (OSD) data for generating an image on a display device, with said downloading occurring in segments separated by gaps.

180. The Brightcove ’918 Products comprise a computer-usable medium having computer-readable program code embodied therein for causing a video processor to download an amount of overlay data for generating an overlay on an image during a gap in downloading the on-screen display (OSD) data, wherein the amount of overlay data comprises a portion of said overlay.

181. By making, using, testing, offering for sale, and/or selling products and services, including but not limited to the Brightcove ’918 Products, Brightcove has injured Dynamic Data and is liable for directly infringing one or more claims of the ’918 Patent, including at least claim 18, pursuant to 35 U.S.C. § 271(a).

182. Brightcove also indirectly infringes the ’918 Patent by actively inducing infringement under 35 USC § 271(b).

183. Brightcove has had knowledge of the ’918 Patent since at least service of this Complaint or shortly thereafter, and Brightcove knew of the ’918 Patent and knew of its infringement, including by way of this lawsuit.

184. Brightcove intended to induce patent infringement by third-party customers and users of the Brightcove ’918 Products and had knowledge that the inducing acts would cause infringement or was willfully blind to the possibility that its inducing acts would cause infringement. Brightcove specifically intended and was aware that the normal and customary use of the accused products would infringe the ’918 Patent. Brightcove performed the acts that constitute induced infringement, and would induce actual infringement, with knowledge of the

'918 Patent and with the knowledge that the induced acts would constitute infringement. For example, Brightcove provides the Brightcove '918 Products that have the capability of operating in a manner that infringe one or more of the claims of the '918 Patent , including at least claim 18, and Brightcove further provides documentation and training materials that cause customers and end users of the Brightcove '918 Products to utilize the products in a manner that directly infringe one or more claims of the '918 Patent .[26] By providing instruction and training to customers and end-users on how to use the Brightcove '918 Products in a manner that directly infringes one or more claims of the '918 Patent , including at least claim 18, Brightcove specifically intended to induce infringement of the '918 Patent . Brightcove engaged in such inducement to promote the sales of the Brightcove '918 Products, e.g., through Brightcove user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '918 Patent. Accordingly, Brightcove has induced and continues to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the '918 Patent, knowing that such use constitutes infringement of the '918 Patent.

185. The '918 Patent is well-known within the industry as demonstrated by multiple citations to the '918 Patent in published patents and patent applications assigned to technology companies and academic institutions. Brightcove is utilizing the technology claimed in the '918

[26] *See, e.g.*, *Overview: Brightcove Player SDK for iOS*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/overview-brightcove-player-sdk-ios; *Brightcove Perform | Fast, Customizable HTML5 Video Player*, BRIGHTCOVE YOUTUBE VIDEO (July 5, 2016) *available at*: https://www.youtube.com/watch?v=1rrgHdzwjVU; *Native Video Playback*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/native-video-playback; *The Brightcove Native Player SDKs*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/brightcove-native-player-sdks; *Brightcove Playback API*, BRIGHTCOVE SUPPORT WEBSITE (last visited June 2019), *available at*: https://support.brightcove.com/playback-api; and *Zencoder DASH Streaming and Playlists*, *B*RIGHTCOVE SUPPORT WEBSITE (last visited June 2019), *available at*: https://support.brightcove.com/zencoder-dash-streaming-and-playlists.

Patent without paying a reasonable royalty. Brightcove is infringing the '918 Patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

186. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the '918 Patent.

187. As a result of Brightcove's infringement of the '918 Patent, Dynamic Data has suffered monetary damages, and seeks recovery in an amount adequate to compensate for Brightcove's infringement, but in no event less than a reasonable royalty for the use made of the invention by Brightcove together with interest and costs as fixed by the Court.

COUNT III
INFRINGEMENT OF U.S. PATENT NO. 6,996,175

188. Dynamic Data references and incorporates by reference the preceding paragraphs of this Complaint as if fully set forth herein.

189. Brightcove designs, makes, uses, sells, and/or offers for sale in the United States products and/or services for recursive motion vector estimation.

190. Brightcove designs, makes, sells, offers to sell, imports, and/or uses products and/or services that encode content in compliance with the H.265 standard including at least the following products and services: Brightcove Video Cloud, Brightcove Enterprise Video Suite, Brightcove Live, Brightcove OTT Flow, and Brightcove Zencoder (collectively, the "Brightcove '175 Product(s)").

191. One or more Brightcove subsidiaries and/or affiliates use the Brightcove '175 Products in regular business operations.

192. One or more of the Brightcove ’175 Products include technology for generating for a block a plurality of candidate vectors from stored vectors.

193. One or more of the Brightcove ’175 Products include technology for estimating a current motion vector for a group of pixels of an image.

194. By complying with the HEVC standard, Brightcove’s devices – such as the Brightcove ’175 Products - necessarily infringe the ’175 Patent. Mandatory sections of the HEVC standard require the elements required by certain claims of the ’175 Patent, including but not limited to claim 2. *High Efficiency Video Coding*, Series H: Audiovisual And Multimedia Systems: Infrastructure Of Audiovisual Services – Coding Of Moving Video Rec. ITU-T H.265 (February 2018) (The following sections of the HEVC Standard are relevant to Brightcove’s infringement of the ’175 Patent: “3.110 Prediction Unit Definition;” “6.3.2 Block and quadtree structures;” “6.3.3 Spatial or component-wise partitioning;” “6.4.2 Derivation process for prediction block availability;” “7.3.4 Scaling list data syntax;” 7.3.6.1 General slice segment header syntax;” “7.3.6.3 Weighted prediction parameters syntax;” “7.3.8.14 Delta QP syntax;” “7.4.4 Profile, tier and level semantics;” and “7.4.7.3 Weighted prediction parameters semantics.”

195. One or more of the Brightcove ’175 Products include technology for selecting one of the test vectors to generate an output vector.

196. One or more of the Brightcove ’175 Products comprise functionality wherein blocks in a picture are further divided into a plurality of blocks.

197. One or more of the Brightcove ’175 Products comprises functionality wherein the vectors generate in the recursive estimation process are generated based on a difference between the output vector and the selected vector.

198. One or more of the Brightcove ’175 Products include technology for storing the output vector as one of the stored vectors for possible use in a next block.

199. Brightcove has directly infringed and continues to directly infringe the ’175 Patent by, among other things, making, using, offering for sale, and/or selling technology for recursive motion vector estimation, including but not limited to the Brightcove ‘175 Products.

200. The Brightcove ’175 Products are available to businesses and individuals throughout the United States.

201. The Brightcove ’175 Products are provided to businesses and individuals located in Delaware.

202. By making, using, testing, offering for sale, and/or selling products and services for recursive motion vector estimation, including but not limited to the Brightcove ’175 Products, Brightcove has injured Dynamic Data and is liable to the Plaintiff for directly infringing one or more claims of the ’175 Patent, including at least claim 2 pursuant to 35 U.S.C. § 271(a).

203. Brightcove also indirectly infringes the ’175 Patent by actively inducing infringement under 35 U.S.C. § 271(b).

204. Brightcove has had knowledge of the ’175 Patent since at least service of this complaint or shortly thereafter, and Brightcove knew of the ’175 Patent and knew of its infringement, including by way of this lawsuit.

205. Brightcove intended to induce patent infringement by third-party customers and users of the Brightcove ’175 Products and had knowledge that the inducing acts would cause infringement or was willfully blind to the possibility that its inducing acts would cause infringement. Brightcove specifically intended and was aware that the normal and customary use of the accused products would infringe the ’175 Patent. Brightcove performed the acts that

constitute induced infringement, and would induce actual infringement, with knowledge of the '175 Patent and with the knowledge that the induced acts would constitute infringement. For example, Brightcove provides the Brightcove '175 Products that have the capability of operating in a manner that infringe one or more of the claims of the '175 Patent, including at least claim 2, and Brightcove further provides documentation and training materials that cause customers and end users of the Brightcove '175 Products to utilize the products in a manner that directly infringe one or more claims of the '175 Patent.[27] By providing instruction and training to customers and end-users on how to use the Brightcove '175 Products in a manner that directly infringes one or more claims of the '175 Patent, including at least claim 2, Brightcove specifically intended to induce infringement of the '175 Patent. Brightcove engaged in such inducement to promote the sales of the Brightcove '175 Products, e.g., through Brightcove user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '175 Patent. Accordingly, Brightcove has induced and continues to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the '175 Patent, knowing that such use constitutes infringement of the '175 Patent.

206. The '175 Patent is well-known within the industry as demonstrated by multiple citations to the '175 Patent in published patents and patent applications assigned to technology

[27] *See, e.g.*, David Sayed, *How To Get Started With UHD In Zencoder*, BRIGHTCOVE BLOG (May 2, 2016), *available at*: https://www.brightcove.com/en/blog/2016/05/how-get-started-uhd-zencoder; *Zencoder: HEVC/H.265 Guide*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/zencoder-hevch265-guide; *Zencoder Encoding Settings: Video*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/zencoder-encoding-settings-video; *Zencoder Encoding Settings: Format and Codecs*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/zencoder-encoding-settings-format-and-codecs; *Brightcove Zencoder: Complete Cloud Service For Video Encoding*, BRIGHTCOVE DATASHEET (2019); and Nathan Veer, *Conquer Live Streaming With An All-in-One Solution*, BRIGHTCOVE WEBINAR (last visited June 2019), *available at*: https://www.brightcove.com/en/webinars?videoId=6008933337001.

companies and academic institutions. Brightcove is utilizing the technology claimed in the '175 Patent without paying a reasonable royalty. Brightcove is infringing the '175 Patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

207. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the '175 Patent.

208. As a result of Brightcove's infringement of the '175 Patent, Dynamic Data has suffered monetary damages, and seeks recovery in an amount adequate to compensate for Brightcove's infringement, but in no event less than a reasonable royalty for the use made of the invention by Brightcove together with interest and costs as fixed by the Court.

COUNT IV
INFRINGEMENT OF U.S. PATENT NO. 6,996,177

209. Dynamic Data references and incorporates by reference the preceding paragraphs of this Complaint as if fully set forth herein.

210. Brightcove designs, makes, uses, sells, and/or offers for sale in the United States products and/or services for motion estimation.

211. Brightcove designs, makes, sells, offers to sell, imports, and/or uses products and/or services that encode content in compliance with the H.265 standard including at least the following products and services: Brightcove Video Cloud, Brightcove Enterprise Video Suite, Brightcove Live, Brightcove OTT Flow, and Brightcove Zencoder (collectively, the "Brightcove '177 Product(s)").

212. One or more Brightcove subsidiaries and/or affiliates use the Brightcove '177 Products in regular business operations.

213. One or more of the Brightcove ’177 Products include technology for motion estimation and motion-compensated picture signal processing.

214. The Brightcove ’177 Products are available to businesses and individuals throughout the United States.

215. The Brightcove ’177 Products are provided to businesses and individuals located in Delaware.

216. Brightcove has directly infringed and continues to directly infringe the ’177 Patent by, among other things, making, using, offering for sale, and/or selling products and services for motion estimation and motion-compensated picture signal processing.

217. The Brightcove ’177 Products comprise methods and devices for motion estimation and motion-compensated picture signal processing.

218. The Brightcove ’177 Products incorporate a motion vector estimation method and device that carries out a block-based motion vector estimation process that involves comparing a plurality of candidate vectors to determine block-based motion vectors.

219. The Brightcove ’177 Products determine at least a most frequently occurring block-based motion vector.

220. The Brightcove ’177 Products carry out a global motion vector estimation process using at least the most frequently occurring block-based motion vector to obtain a global motion vector.

221. The Brightcove ’177 Products applies the global motion vector as a candidate vector to the block-based motion vector estimation process.

222. By making, using, testing, offering for sale, and/or selling products and services, including but not limited to the Brightcove ’177 Products, Brightcove has injured Dynamic Data

and is liable for directly infringing one or more claims of the '177 Patent, including at least claim 1, pursuant to 35 U.S.C. § 271(a).

223. Brightcove also indirectly infringes the '177 Patent by actively inducing infringement under 35 USC § 271(b).

224. Brightcove has had knowledge of the '177 Patent since at least service of this Complaint or shortly thereafter, and Brightcove knew of the '177 Patent and knew of its infringement, including by way of this lawsuit.

225. Brightcove intended to induce patent infringement by third-party customers and users of the Brightcove '177 Products and had knowledge that the inducing acts would cause infringement or was willfully blind to the possibility that its inducing acts would cause infringement. Brightcove specifically intended and was aware that the normal and customary use of the accused products would infringe the '177 Patent. Brightcove performed the acts that constitute induced infringement, and would induce actual infringement, with knowledge of the '177 Patent and with the knowledge that the induced acts would constitute infringement. For example, Brightcove provides the Brightcove '177 Products that have the capability of operating in a manner that infringe one or more of the claims of the '177 Patent, including at least claim 1, and Brightcove further provides documentation and training materials that cause customers and end users of the Brightcove '177 Products to utilize the products in a manner that directly infringe one or more claims of the '177 Patent.[28] By providing instruction and training to customers and

[28] *See, e.g.*, David Sayed, *How To Get Started With UHD In Zencoder*, BRIGHTCOVE BLOG (May 2, 2016), *available at*: https://www.brightcove.com/en/blog/2016/05/how-get-started-uhd-zencoder; *Zencoder: HEVC/H.265 Guide*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/zencoder-hevch265-guide; *Zencoder Encoding Settings: Video*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/zencoder-encoding-settings-video; *Zencoder Encoding Settings: Format and Codecs*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/zencoder-encoding-settings-format-and-codecs;

end-users on how to use the Brightcove '177 Products in a manner that directly infringes one or more claims of the '177 Patent, including at least claim 1, Brightcove specifically intended to induce infringement of the '177 Patent. Brightcove engaged in such inducement to promote the sales of the Brightcove '177 Products, e.g., through Brightcove user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '177 Patent. Accordingly, Brightcove has induced and continues to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the '177 Patent, knowing that such use constitutes infringement of the '177 Patent.

226. The '177 Patent is well-known within the industry as demonstrated by multiple citations to the '177 Patent in published patents and patent applications assigned to technology companies and academic institutions. Brightcove is utilizing the technology claimed in the '177 Patent without paying a reasonable royalty. Brightcove is infringing the '177 Patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

227. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the '177 Patent.

228. As a result of Brightcove's infringement of the '177 Patent, Dynamic Data has suffered monetary damages, and seeks recovery in an amount adequate to compensate for Brightcove's infringement, but in no event less than a reasonable royalty for the use made of the invention by Brightcove together with interest and costs as fixed by the Court.

Brightcove Zencoder: Complete Cloud Service For Video Encoding, BRIGHTCOVE DATASHEET (2019); and Nathan Veer, *Conquer Live Streaming With An All-in-One Solution,* BRIGHTCOVE WEBINAR (last visited June 2019), *available at*: https://www.brightcove.com/en/webinars?videoId=6008933337001.

COUNT V
INFRINGEMENT OF U.S. PATENT NO. 7,010,039

229. Dynamic Data references and incorporates by reference the preceding paragraphs of this Complaint as if fully set forth herein.

230. Brightcove designs, makes, uses, sells, and/or offers for sale in the United States products and/or services for detecting motion.

231. Brightcove designs, makes, sells, offers to sell, imports, and/or uses products and/or services that encode content in compliance with the H.265 standard including at least the following products and services: Brightcove Video Cloud, Brightcove Enterprise Video Suite, Brightcove Live, Brightcove OTT Flow, and Brightcove Zencoder (collectively, the "Brightcove '039 Product(s)").

232. One or more Brightcove subsidiaries and/or affiliates use the Brightcove '039 Products in regular business operations.

233. One or more of the Brightcove '039 Products include technology for detecting motion.

234. The Brightcove '039 Products are available to businesses and individuals throughout the United States.

235. The Brightcove '039 Products are provided to businesses and individuals located in Delaware.

236. Brightcove has directly infringed and continues to directly infringe the '039 Patent by, among other things, making, using, offering for sale, and/or selling technology for detecting motion, including but not limited to the Brightcove '039 Products.

237. The Brightcove '039 Products detect motion at a temporal intermediate position between previous and next images.

238. The Brightcove ’039 Products carry out the optimization at the temporal position of the next image in covering areas and at the temporal position of the previous image in uncovering areas.

239. The Brightcove ’039 Products detect motion at a temporal intermediate position between previous and next images.

240. The Brightcove ’039 Products utilize a criterion function for candidate vectors that is optimized.

241. The Brightcove ’039 Products utilize a criterion function that depends on data from both previous and next images and in which the optimizing is carried out at the temporal intermediate position in non-covering and non-uncovering areas, characterized in that the optimizing is carried out at the temporal position of the next image in covering areas and at the temporal position of the previous image in uncovering areas.

242. By making, using, testing, offering for sale, and/or selling products and services, including but not limited to the Brightcove ’039 Products, Brightcove has injured Dynamic Data and is liable for directly infringing one or more claims of the ’039 Patent, including at least claim 13, pursuant to 35 U.S.C. § 271(a).

243. Brightcove also indirectly infringes the ’039 Patent by actively inducing infringement under 35 USC § 271(b).

244. Brightcove has had knowledge of the ’039 Patent since at least service of this Complaint or shortly thereafter, and Brightcove knew of the ’039 Patent and knew of its infringement, including by way of this lawsuit.

245. Brightcove intended to induce patent infringement by third-party customers and users of the Brightcove ’039 Products and had knowledge that the inducing acts would cause

infringement or was willfully blind to the possibility that its inducing acts would cause infringement. Brightcove specifically intended and was aware that the normal and customary use of the accused products would infringe the '039 Patent. Brightcove performed the acts that constitute induced infringement, and would induce actual infringement, with knowledge of the '039 Patent and with the knowledge that the induced acts would constitute infringement. For example, Brightcove provides the Brightcove '039 Products that have the capability of operating in a manner that infringe one or more of the claims of the '039 Patent, including at least claim 13, and Brightcove further provides documentation and training materials that cause customers and end users of the Brightcove '039 Products to utilize the products in a manner that directly infringe one or more claims of the '039 Patent.[29] By providing instruction and training to customers and end-users on how to use the Brightcove '039 Products in a manner that directly infringes one or more claims of the '039 Patent, including at least claim 13, Brightcove specifically intended to induce infringement of the '039 Patent. Brightcove engaged in such inducement to promote the sales of the Brightcove '039 Products, e.g., through Brightcove user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '039 Patent. Accordingly, Brightcove has induced and continues to induce users of

[29] *See, e.g.*, David Sayed, *How To Get Started With UHD In Zencoder*, BRIGHTCOVE BLOG (May 2, 2016), *available at*: https://www.brightcove.com/en/blog/2016/05/how-get-started-uhd-zencoder; *Zencoder: HEVC/H.265 Guide*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/zencoder-hevch265-guide; *Zencoder Encoding Settings: Video*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/zencoder-encoding-settings-video; *Zencoder Encoding Settings: Format and Codecs*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/zencoder-encoding-settings-format-and-codecs; *Brightcove Zencoder: Complete Cloud Service For Video Encoding*, BRIGHTCOVE DATASHEET (2019); and Nathan Veer, *Conquer Live Streaming With An All-in-One Solution*, BRIGHTCOVE WEBINAR (last visited June 2019), *available at*: https://www.brightcove.com/en/webinars?videoId=6008933337001.

the accused products to use the accused products in their ordinary and customary way to infringe the ’039 Patent, knowing that such use constitutes infringement of the ’039 Patent.

246. The ’039 Patent is well-known within the industry as demonstrated by multiple citations to the ’039 Patent in published patents and patent applications assigned to technology companies and academic institutions. Brightcove is utilizing the technology claimed in the ’039 Patent without paying a reasonable royalty. Brightcove is infringing the ’039 Patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

247. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the ’039 Patent.

248. As a result of Brightcove’s infringement of the ’039 Patent, Dynamic Data has suffered monetary damages, and seeks recovery in an amount adequate to compensate for Brightcove’s infringement, but in no event less than a reasonable royalty for the use made of the invention by Brightcove together with interest and costs as fixed by the Court.

COUNT VI
INFRINGEMENT OF U.S. PATENT NO. 8,311,112

249. Dynamic Data references and incorporates by reference the preceding paragraphs of this Complaint as if fully set forth herein.

250. Brightcove designs, makes, uses, sells, and/or offers for sale in the United States products and/or services for video compression.

251. Brightcove designs, makes, sells, offers to sell, imports, and/or uses products and/or services that encode content in compliance with the H.265 standard including at least the following products and services: Brightcove Video Cloud, Brightcove Enterprise Video Suite, Brightcove

Live, Brightcove OTT Flow, and Brightcove Zencoder (collectively, the "Brightcove '112 Product(s)").

252. One or more Brightcove subsidiaries and/or affiliates use the Brightcove '112 Products in regular business operations.

253. One or more of the Brightcove '112 Products include technology for video compression.

254. Brightcove has directly infringed and continues to directly infringe the '112 Patent by, among other things, making, using, offering for sale, and/or selling technology for video compression, including but not limited to the Brightcove '112 Products.

255. One or more of the Brightcove '112 Products perform predictive coding on a macroblock of a video frame such that a set of pixels of the macroblock is coded using some of the pixels from the same video frame as reference pixels and the rest of the macroblock is coded using reference pixels from at least one other video frame.

256. One or more of the Brightcove '112 Products include a system for video compression comprising an intra-frame coding unit configured to perform predictive coding on a set of pixels of a macroblock of pixels using a first group of reference pixels, the macroblock of pixels and the first group of reference pixels being from a video frame.

257. One or more of the Brightcove '112 Products include a system for video compression comprising an inter-frame coding unit configured to perform predictive coding on the rest of the macroblock of pixels using a second group of reference pixels, the second group of reference pixels being from at least one other video frame.

258. The Brightcove '112 Products are available to businesses and individuals throughout the United States.

259. The Brightcove ’112 Products are provided to businesses and individuals located in Delaware.

260. By making, using, testing, offering for sale, and/or selling products and services for interpolating a pixel during the interlacing of a video signal, including but not limited to the Brightcove ’112 Products, Brightcove has injured Dynamic Data and is liable to the Plaintiff for directly infringing one or more claims of the ’112 Patent, including at least claim 11 pursuant to 35 U.S.C. § 271(a).

261. Brightcove also indirectly infringes the ’112 Patent by actively inducing infringement under 35 USC § 271(b).

262. Brightcove has had knowledge of the ’112 Patent since at least service of this Complaint or shortly thereafter, and Brightcove knew of the ’112 Patent and knew of its infringement, including by way of this lawsuit.

263. Brightcove intended to induce patent infringement by third-party customers and users of the Brightcove ’112 Products and had knowledge that the inducing acts would cause infringement or was willfully blind to the possibility that its inducing acts would cause infringement. Brightcove specifically intended and was aware that the normal and customary use of the accused products would infringe the ’112 Patent. Brightcove performed the acts that constitute induced infringement, and would induce actual infringement, with knowledge of the ’112 Patent and with the knowledge that the induced acts would constitute infringement. For example, Brightcove provides the Brightcove ’112 Products that have the capability of operating in a manner that infringe one or more of the claims of the ’112 Patent, including at least claim 11, and Brightcove further provides documentation and training materials that cause customers and end users of the Brightcove ’112 Products to utilize the products in a manner that directly infringe

one or more claims of the '112 Patent.[30] By providing instruction and training to customers and end-users on how to use the Brightcove '112 Products in a manner that directly infringes one or more claims of the '112 Patent, including at least claim 11, Brightcove specifically intended to induce infringement of the '112 Patent. Brightcove engaged in such inducement to promote the sales of the Brightcove '112 Products, e.g., through Brightcove user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '112 Patent. Accordingly, Brightcove has induced and continues to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the '112 Patent, knowing that such use constitutes infringement of the '112 Patent.

264. The '112 Patent is well-known within the industry as demonstrated by multiple citations to the '112 Patent in published patents and patent applications assigned to technology companies and academic institutions. Brightcove is utilizing the technology claimed in the '112 Patent without paying a reasonable royalty. Brightcove is infringing the '112 Patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

265. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the '112 Patent.

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[30] *See, e.g.*, David Sayed, *How To Get Started With UHD In Zencoder*, BRIGHTCOVE BLOG (May 2, 2016), *available at*: https://www.brightcove.com/en/blog/2016/05/how-get-started-uhd-zencoder; *Zencoder: HEVC/H.265 Guide*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/zencoder-hevch265-guide; *Zencoder Encoding Settings: Video*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/zencoder-encoding-settings-video; *Zencoder Encoding Settings: Format and Codecs*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/zencoder-encoding-settings-format-and-codecs; *Brightcove Zencoder: Complete Cloud Service For Video Encoding*, BRIGHTCOVE DATASHEET (2019); and Nathan Veer, *Conquer Live Streaming With An All-in-One Solution*, BRIGHTCOVE WEBINAR (last visited June 2019), *available at*: https://www.brightcove.com/en/webinars?videoId=6008933337001.

266. As a result of Brightcove's infringement of the '112 Patent, Dynamic Data has suffered monetary damages, and seeks recovery in an amount adequate to compensate for Brightcove's infringement, but in no event less than a reasonable royalty for the use made of the invention by Brightcove together with interest and costs as fixed by the Court.

COUNT VII
INFRINGEMENT OF U.S. PATENT NO. 7,894,529

267. Dynamic Data references and incorporates by reference the preceding paragraphs of this Complaint as if fully set forth herein.

268. Brightcove designs, makes, uses, sells, and/or offers for sale in the United States products and/or services for determining motion vectors that are each assigned to individual image regions.

269. Brightcove designs, makes, sells, offers to sell, imports, and/or uses products and/or services that decode content in compliance with the H.265 standard including at least the following products and services: Brightcove Video Cloud, Brightcove Enterprise Video Suite, Brightcove Player, and Brightcove OTT Flow (collectively, the "Brightcove '529 Product(s)").

270. One or more Brightcove subsidiaries and/or affiliates use the Brightcove '529 Products in regular business operations.

271. One or more of the Brightcove '529 Products include technology for determining motion vectors that are each assigned to individual image regions.

272. Brightcove has directly infringed and continues to directly infringe the '529 Patent by, among other things, making, using, offering for sale, and/or selling technology for determining motion vectors that are each assigned to individual image regions, including but not limited to the Brightcove '529 Products.

273. One or more of the Brightcove ’529 Products enable an increase in the resolution of video and image signals during the motion estimation process.

274. One or more of the Brightcove ’529 Products perform a method for determining motion vectors which are assigned to individual image regions of an image.

275. One or more of the Brightcove ’529 Products perform a method wherein an image is subdivided into a number of image blocks, and a motion estimation technique is implemented to assign at least one motion vector to each of the image blocks where a modified motion vector is generated for at least a first image block.

276. One or more of the Brightcove ’529 Products perform a method that determines at least a second image block through which the motion vector assigned to the first image block at least partially passes.

277. One or more of the Brightcove ’529 Products perform a method that generates the modified motion vector as a function of a motion vector assigned to at least the second image block.

278. One or more of the Brightcove ’529 Products perform a method that assigns the modified motion vector as the motion vector to the first image block.

279. The Brightcove ’529 Products are available to businesses and individuals throughout the United States.

280. The Brightcove ’529 Products are provided to businesses and individuals located in Delaware.

281. By making, using, testing, offering for sale, and/or selling products and services for interpolating a pixel during the interlacing of a video signal, including but not limited to the Brightcove ’529 Products, Brightcove has injured Dynamic Data and is liable to the Plaintiff for

directly infringing one or more claims of the ’529 Patent, including at least claim 1 pursuant to 35 U.S.C. § 271(a).

282. Brightcove also indirectly infringes the ’529 Patent by actively inducing infringement under 35 USC § 271(b).

283. Brightcove has had knowledge of the ’529 Patent since at least service of this Complaint or shortly thereafter, and Brightcove knew of the ’529 Patent and knew of its infringement, including by way of this lawsuit.

284. Brightcove intended to induce patent infringement by third-party customers and users of the Brightcove ’529 Products and had knowledge that the inducing acts would cause infringement or was willfully blind to the possibility that its inducing acts would cause infringement. Brightcove specifically intended and was aware that the normal and customary use of the accused products would infringe the ’529 Patent. Brightcove performed the acts that constitute induced infringement, and would induce actual infringement, with knowledge of the ’529 Patent and with the knowledge that the induced acts would constitute infringement. For example, Brightcove provides the Brightcove ’529 Products that have the capability of operating in a manner that infringe one or more of the claims of the ’529 Patent, including at least claim 1, and Brightcove further provides documentation and training materials that cause customers and end users of the Brightcove ’529 Products to utilize the products in a manner that directly infringe one or more claims of the ’529 Patent.[31] By providing instruction and training to customers and

[31] *See, e.g.*, *Overview: Brightcove Player SDK for iOS*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/overview-brightcove-player-sdk-ios; *Brightcove Perform | Fast, Customizable HTML5 Video Player*, BRIGHTCOVE YOUTUBE VIDEO (July 5, 2016) *available at*: https://www.youtube.com/watch?v=1rrgHdzwjVU; *Native Video Playback*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/native-video-playback; *The Brightcove Native Player SDKs*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/brightcove-native-player-sdks;

end-users on how to use the Brightcove '529 Products in a manner that directly infringes one or more claims of the '529 Patent, including at least claim 1, Brightcove specifically intended to induce infringement of the '529 Patent. Brightcove engaged in such inducement to promote the sales of the Brightcove '529 Products, e.g., through Brightcove user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '529 Patent. Accordingly, Brightcove has induced and continues to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the '529 Patent, knowing that such use constitutes infringement of the '529 Patent.

285. The '529 Patent is well-known within the industry as demonstrated by multiple citations to the '529 Patent in published patents and patent applications assigned to technology companies and academic institutions. Brightcove is utilizing the technology claimed in the '529 Patent without paying a reasonable royalty. Brightcove is infringing the '529 Patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

286. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the '529 Patent.

287. As a result of Brightcove's infringement of the '529 Patent, Dynamic Data has suffered monetary damages, and seeks recovery in an amount adequate to compensate for Brightcove's infringement, but in no event less than a reasonable royalty for the use made of the invention by Brightcove together with interest and costs as fixed by the Court.

Brightcove Playback API, BRIGHTCOVE SUPPORT WEBSITE (last visited June 2019), *available at*: https://support.brightcove.com/playback-api; and *Zencoder DASH Streaming and Playlists, B*RIGHTCOVE SUPPORT WEBSITE (last visited June 2019), *available at*: https://support.brightcove.com/zencoder-dash-streaming-and-playlists.

COUNT VIII
INFRINGEMENT OF U.S. PATENT NO. 7,519,230

288. Dynamic Data references and incorporates by reference the preceding paragraphs of this Complaint as if fully set forth herein.

289. Brightcove designs, makes, uses, sells, and/or offers for sale in the United States products and/or services for selecting a background motion vector for a pixel in an occlusion region of an image.

290. Brightcove designs, makes, sells, offers to sell, imports, and/or uses products and/or services that support content encoded using VP9 including at least the following products and services: Brightcove Video Cloud, Brightcove Enterprise Video Suite, Brightcove Player, Brightcove Live, Brightcove OTT Flow, and Brightcove Zencoder (collectively, the "Brightcove '230 Product(s)").

291. One or more Brightcove subsidiaries and/or affiliates use the Brightcove '230 Products in regular business operations.

292. One or more of the Brightcove '230 Products include technology for selecting a background motion vector for a pixel in an occlusion region of an image.

293. The Brightcove '230 Products are available to businesses and individuals throughout the United States.

294. The Brightcove '230 Products are provided to businesses and individuals located in Delaware.

295. Brightcove has directly infringed and continues to directly infringe the '230 Patent by, among other things, making, using, offering for sale, and/or selling technology for selecting a background motion vector for a pixel in an occlusion region of an image, including but not limited to the Brightcove '230 Products.

296. The Brightcove ’230 Products comprise systems and methods for selecting a background motion vector for a pixel in an occlusion region of an image.

297. The Brightcove ’230 Products determine the correct motion vector in occlusion regions, thereby reducing or eliminating artifacts of motion compensated image rate converters, which are referred to as “halos” in the display of video images.

298. The Brightcove ’230 Products perform a method of selecting a background motion vector for a pixel in an occlusion region of an image comprising computing a model-based motion vector for the pixel on basis of a motion model being determined on basis of a part of a motion vector field of the image.

299. The Brightcove ’230 Products perform a method of selecting a background motion vector for a pixel in an occlusion region of an image comprising comparing the model-based motion vector with each of the motion vectors of the set of motion vectors.

300. The Brightcove ’230 Products perform a method of selecting a background motion vector for a pixel in an occlusion region of an image comprising selecting a particular motion vector of the set of motion vectors on basis of the comparing and for assigning the particular motion vector as the background motion vector.

301. By making, using, testing, offering for sale, and/or selling products and services, including but not limited to the Brightcove ’230 Products, Brightcove has injured Dynamic Data and is liable for directly infringing one or more claims of the ’230 Patent, including at least claim 6, pursuant to 35 U.S.C. § 271(a).

302. Brightcove also indirectly infringes the ’230 Patent by actively inducing infringement under 35 USC § 271(b).

303. Brightcove has had knowledge of the ’230 Patent since at least service of this Complaint or shortly thereafter, and Brightcove knew of the ’230 Patent and knew of its infringement, including by way of this lawsuit.

304. Brightcove intended to induce patent infringement by third-party customers and users of the Brightcove ’230 Products and had knowledge that the inducing acts would cause infringement or was willfully blind to the possibility that its inducing acts would cause infringement. Brightcove specifically intended and was aware that the normal and customary use of the accused products would infringe the ’230 Patent. Brightcove performed the acts that constitute induced infringement, and would induce actual infringement, with knowledge of the ’230 Patent and with the knowledge that the induced acts would constitute infringement. For example, Brightcove provides the Brightcove ’230 Products that have the capability of operating in a manner that infringe one or more of the claims of the ‘230 Patent, including at least claim 6, and Brightcove further provides documentation and training materials that cause customers and end users of the Brightcove ’230 Products to utilize the products in a manner that directly infringe one or more claims of the ’230 Patent.[32] By providing instruction and training to customers and end-users on how to use the Brightcove ’230 Products in a manner that directly infringes one or more claims of the ’230 Patent, including at least claim 6, Brightcove specifically intended to

[32] *See, e.g.*, *Zencoder: VP9 Guide*, BRIGHTCOVE SUPPORT WEBSITE (last visited June 2019), *available at:* https://support.brightcove.com/zencoder-vp9-guide; David Sayed, *Get Ready For Ultra High Definition*, BRIGHTCOVE BLOG (April 14, 2016), *available at:* https://www.brightcove.com/en/blog/2016/04/get-ready-ultra-high-definition; *Zencoder Encoding Settings: Video*, BRIGHTCOVE SUPPORT WEBSITE (last visited June 2019), *available at:* https://support.brightcove.com/zencoder-encoding-settings-video; *Zencoder Encoding Settings: Video Processing*, BRIGHTCOVE SUPPORT WEBSITE (last visited June 2019), *available at:* https://support.brightcove.com/zencoder-encoding-settings-video-processing; *File Transcoding*, ZENCODER.COM WEBSITE (last visited June 2019), *available at:* https://zencoder.com/en/file-transcoding; and *Administering Video Cloud*, BRIGHTCOVE UNIVERSITY VIDEO COURSE (last visited June 2019), *available at:* https://university.brightcove.com/catalog/courses/512605.

induce infringement of the ’230 Patent. Brightcove engaged in such inducement to promote the sales of the Brightcove ’230 Products, e.g., through Brightcove user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the ’230 Patent. Accordingly, Brightcove has induced and continues to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the ’230 Patent, knowing that such use constitutes infringement of the ’230 Patent.

305. The ’230 Patent is well-known within the industry as demonstrated by multiple citations to the ’230 Patent in published patents and patent applications assigned to technology companies and academic institutions. Brightcove is utilizing the technology claimed in the ’230 Patent without paying a reasonable royalty. Brightcove is infringing the ’230 Patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

306. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the ’230 Patent.

307. As a result of Brightcove’s infringement of the ’230 Patent, Dynamic Data has suffered monetary damages, and seeks recovery in an amount adequate to compensate for Brightcove’s infringement, but in no event less than a reasonable royalty for the use made of the invention by Brightcove together with interest and costs as fixed by the Court.

COUNT IX
INFRINGEMENT OF U.S. PATENT NO. 7,571,450

308. Dynamic Data references and incorporates by reference the preceding paragraphs of this Complaint as if fully set forth herein.

309. Brightcove designs, makes, uses, sells, and/or offers for sale in the United States products and/or services for displaying information.

310. Brightcove designs, makes, sells, offers to sell, imports, and/or uses products and/or services that decode content in compliance with the H.265 standard including at least the following products and services: Brightcove Video Cloud, Brightcove Enterprise Video Suite, Brightcove Player, and Brightcove OTT Flow (collectively, the "Brightcove '450 Product(s)").

311. One or more Brightcove subsidiaries and/or affiliates use the Brightcove '450 Products in regular business operations.

312. One or more of the Brightcove '450 Products include technology for displaying information.

313. Brightcove has directly infringed and continues to directly infringe the '450 Patent by, among other things, making, using, offering for sale, and/or selling technology for displaying information, including but not limited to the Brightcove '450 Products.

314. One or more of the Brightcove '450 Products enable methods and systems wherein a user does not need to make a new selection after being switched from one service to a second service.

315. One or more of the Brightcove '450 Products permit a user of an information display system to have selections made on a first service also presented when the user switches to a second service without requiring the user to browse through the menus to define the type of information to be displayed a second time.

316. One or more of the Brightcove '450 Products enable a user selection being made on the basis of the provided options while the first service was selected is use to select the appropriate data elements of the stream of the second service.

317. One or more of the Brightcove ’450 Products enable various content sources to share similar information models.

318. One or more of the Brightcove ’450 Products perform a method of displaying information on a display device wherein receiving a transport stream comprises services, with the services having elementary streams of video and of data elements.

319. One or more of the Brightcove ’450 Products perform a method of displaying information on a display device wherein user actions of making a user selection of a type of information to be displayed on the device are received.

320. One or more of the Brightcove ’450 Products perform a method of displaying information on a display device wherein filtering to select a data element of a first one of the services on the basis of the user selection is performed.

321. One or more of the Brightcove ’450 Products perform a method of displaying information on a display device wherein rendering to calculate an output image to be displayed on the display device, on the basis of the first data element selected by the filer is performed.

322. One or more of the Brightcove ’450 Products perform a method of displaying information on a display device wherein switching from the first one of the services to a second one of the services, characterized in comprising a second step of filtering to select a second data-element of the second one of the services, on basis of the user selection is performed.

323. One or more of the Brightcove ’450 Products perform a method of displaying information on a display device wherein being switched from the first one of the services to the second one of the services, with the data-element and the second data-element being mutually semantically related and a second step of rendering to calculate the output image to be displayed on the display device, on basis of the second data-element selected by the filter is performed.

324. The Brightcove ’450 Products are available to businesses and individuals throughout the United States.

325. The Brightcove ’450 Products are provided to businesses and individuals located in Delaware.

326. By making, using, testing, offering for sale, and/or selling products and services for displaying information, including but not limited to the Brightcove ’450 Products, Brightcove has injured Dynamic Data and is liable to the Plaintiff for directly infringing one or more claims of the ‘450 Patent, including at least claim 8 pursuant to 35 U.S.C. § 271(a).

327. Brightcove also indirectly infringes the ’450 Patent by actively inducing infringement under 35 USC § 271(b).

328. Brightcove has had knowledge of the ’450 Patent since at least service of this Complaint or shortly thereafter, and Brightcove knew of the ’450 Patent and knew of its infringement, including by way of this lawsuit.

329. Brightcove intended to induce patent infringement by third-party customers and users of the Brightcove ’450 Products and had knowledge that the inducing acts would cause infringement or was willfully blind to the possibility that its inducing acts would cause infringement. Brightcove specifically intended and was aware that the normal and customary use of the accused products would infringe the ’450 Patent. Brightcove performed the acts that constitute induced infringement, and would induce actual infringement, with knowledge of the ’450 Patent and with the knowledge that the induced acts would constitute infringement. For example, Brightcove provides the Brightcove ’450 Products that have the capability of operating in a manner that infringe one or more of the claims of the ’450 Patent, including at least claim 8, and Brightcove further provides documentation and training materials that cause customers and

end users of the Brightcove ’450 Products to utilize the products in a manner that directly infringe one or more claims of the ’450 Patent.[33] By providing instruction and training to customers and end-users on how to use the Brightcove ’450 Products in a manner that directly infringes one or more claims of the ’450 Patent, including at least claim 8, Brightcove specifically intended to induce infringement of the ’450 Patent. Brightcove engaged in such inducement to promote the sales of the Brightcove ’450 Products, e.g., through Brightcove user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the ’450 Patent. Accordingly, Brightcove has induced and continues to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the ’450 Patent, knowing that such use constitutes infringement of the ’450 Patent.

330. The ’450 Patent is well-known within the industry as demonstrated by multiple citations to the ’450 Patent in published patents and patent applications assigned to technology companies and academic institutions. Brightcove is utilizing the technology claimed in the ’450 Patent without paying a reasonable royalty. Brightcove is infringing the ’450 Patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

[33] *See, e.g.*, *Overview: Brightcove Player SDK for iOS*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/overview-brightcove-player-sdk-ios; *Brightcove Perform | Fast, Customizable HTML5 Video Player*, BRIGHTCOVE YOUTUBE VIDEO (July 5, 2016) *available at*: https://www.youtube.com/watch?v=1rrgHdzwjVU; *Native Video Playback*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/native-video-playback; *The Brightcove Native Player SDKs*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/brightcove-native-player-sdks; *Brightcove Playback API*, BRIGHTCOVE SUPPORT WEBSITE (last visited June 2019), *available at*: https://support.brightcove.com/playback-api; and *Zencoder DASH Streaming and Playlists*, *B*RIGHTCOVE SUPPORT WEBSITE (last visited June 2019), *available at*: https://support.brightcove.com/zencoder-dash-streaming-and-playlists.

331. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the ’450 Patent.

332. As a result of Brightcove’s infringement of the ’450 Patent, Dynamic Data has suffered monetary damages, and seeks recovery in an amount adequate to compensate for Brightcove’s infringement, but in no event less than a reasonable royalty for the use made of the invention by Brightcove together with interest and costs as fixed by the Court.

COUNT X
INFRINGEMENT OF U.S. PATENT NO. 8,385,426

333. Dynamic Data references and incorporates by reference the preceding paragraphs of this Complaint as if fully set forth herein.

334. Brightcove designs, makes, uses, sells, and/or offers for sale in the United States products and/or services for generating a mosaic program guide.

335. Brightcove designs, makes, sells, offers to sell, imports, and/or uses products and/or services that enable a mosaic programming guide including at least the following products and services: Brightcove OTT Flow and Brightcove Gallery (collectively, the “Brightcove ’426 Product(s)”).

336. One or more Brightcove subsidiaries and/or affiliates use the Brightcove ’426 Products in regular business operations.

337. One or more of the Brightcove ’426 Products include technology for generating mosaic program guides.

338. The Brightcove ’426 Products are available to businesses and individuals throughout the United States.

339. The Brightcove ’426 Products are provided to businesses and individuals located in Delaware.

340. Brightcove has directly infringed and continues to directly infringe the ’426 Patent by, among other things, making, using, offering for sale, and/or selling technology for generating mosaic program guides, including but not limited to the Brightcove ’426 Products.

341. The Brightcove ’426 Products create mosaic program guides by generating I frames from a coded video bit stream, placing each I frame into mosaic windows, and combining the mosaic windows into a mosaic video frame.

342. The Brightcove ’426 Products perform a method of generating a mosaic program guide comprising generating I frames from a coded video bit stream by a video decoder of a receiver.

343. The Brightcove ’426 Products perform a method of generating a mosaic program guide comprising placing each I frame into one of a multiplicity of mosaic windows by the receiver.

344. The Brightcove ’426 Products perform a method of generating a mosaic program guide comprising combining in the receiver the multiplicity of mosaic windows into a mosaic video frame.

345. By making, using, testing, offering for sale, and/or selling products and services, including but not limited to the Brightcove ’426 Products, Brightcove has injured Dynamic Data and is liable for directly infringing one or more claims of the ’426 Patent, including at least claim 1, pursuant to 35 U.S.C. § 271(a).

346. Brightcove also indirectly infringes the ’426 Patent by actively inducing infringement under 35 USC § 271(b).

347. Brightcove has had knowledge of the '426 Patent since at least service of this Complaint or shortly thereafter, and Brightcove knew of the '426 Patent and knew of its infringement, including by way of this lawsuit.

348. Brightcove intended to induce patent infringement by third-party customers and users of the Brightcove '426 Products and had knowledge that the inducing acts would cause infringement or was willfully blind to the possibility that its inducing acts would cause infringement. Brightcove specifically intended and was aware that the normal and customary use of the accused products would infringe the '426 Patent. Brightcove performed the acts that constitute induced infringement, and would induce actual infringement, with knowledge of the '426 Patent and with the knowledge that the induced acts would constitute infringement. For example, Brightcove provides the Brightcove '426 Products that have the capability of operating in a manner that infringe one or more of the claims of the '426 Patent, including at least claim 1, and Brightcove further provides documentation and training materials that cause customers and end users of the Brightcove '426 Products to utilize the products in a manner that directly infringe one or more claims of the '426 Patent.[34] By providing instruction and training to customers and end-users on how to use the Brightcove '426 Products in a manner that directly infringes one or more claims of the '426 Patent, including at least claim 1, Brightcove specifically intended to

[34] *See, e.g.*, *Brightcove Gallery: Create Powerful Video Experiences*, BRIGHTCOVE YOUTUBE VIDEO (June 29, 2017), *available at*: https://www.youtube.com/watch?v=wYvY2MP3qyw; *Overview: In-Page Experience API*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/overview-page-experience-api; *Brightcove Gallery – Getting Started Guide*, BRIGHTCOVE SUPPORT WEBSITE (last visited June 2019), *available at*: https://support.brightcove.com/getting-started-gallery; *Brightcove Gallery Release Notes*, BRIGHTCOVE DOCUMENTATION (September 27, 2018), *available at*: https://support.brightcove.com/gallery-release-notes; *Step-by-Step: Creating and Publishing a Portal Experience*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/step-step-creating-and-publishing-portal-experience; and *Brightcove OTT Video Services*, BRIGHTCOVE WEBSITE (last visited June 2019), *available at*: https://www.brightcove.com/en/solutions/publishers-broadcasters/ott.

induce infringement of the ’426 Patent. Brightcove engaged in such inducement to promote the sales of the Brightcove ’426 Products, e.g., through Brightcove user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the ’426 Patent. Accordingly, Brightcove has induced and continues to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the ’426 Patent, knowing that such use constitutes infringement of the ’426 Patent.

349. The ’426 Patent is well-known within the industry as demonstrated by multiple citations to the ’426 Patent in published patents and patent applications assigned to technology companies and academic institutions. Brightcove is utilizing the technology claimed in the ’426 Patent without paying a reasonable royalty. Brightcove is infringing the ’426 Patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

350. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the ’426 Patent.

351. As a result of Brightcove’s infringement of the ’426 Patent, Dynamic Data has suffered monetary damages, and seeks recovery in an amount adequate to compensate for Brightcove’s infringement, but in no event less than a reasonable royalty for the use made of the invention by Brightcove together with interest and costs as fixed by the Court.

COUNT XI
INFRINGEMENT OF U.S. PATENT NO. 7,058,227

352. Dynamic Data references and incorporates by reference the preceding paragraphs of this Complaint as if fully set forth herein.

353. Brightcove designs, makes, uses, sells, and/or offers for sale in the United States products and/or services for detecting occlusion and reducing halo effects in motion compensated pictures.

354. Brightcove designs, makes, sells, offers to sell, imports, and/or uses products and/or services that support content encoded using VP9 including at least the following products and services: Brightcove Video Cloud, Brightcove Enterprise Video Suite, Brightcove Player, Brightcove Live, Brightcove OTT Flow, and Brightcove Zencoder (collectively, the "Brightcove '227 Product(s)").

355. One or more Brightcove subsidiaries and/or affiliates use the Brightcove '227 Products in regular business operations.

356. One or more of the Brightcove '227 Products include technology for detecting occlusion and reducing halo effects in motion compensated pictures.

357. Brightcove has directly infringed and continues to directly infringe the '227 Patent by, among other things, making, using, offering for sale, and/or selling technology for detecting occlusion and reducing halo effects in motion compensated pictures, including but not limited to the Brightcove '227 Products.

358. One or more of the Brightcove '227 Products interpolate images between existing images.

359. One or more of the Brightcove '227 Products are capable of adapting the interpolation strategy depending on a segmentation of the image in various areas.

360. One or more of the Brightcove '227 Products perform a method of locating problem areas in an image signal that includes estimating a motion vector field for the image signal.

361. One or more of the Brightcove ’227 Products perform a method of locating problem areas in an image signal that includes detecting edges in the motion vectors field.

362. One or more of the Brightcove ’227 Products perform a method of locating problem areas in an image signal that includes comparing edge locations in successive field periods to identify both foreground and background.

363. The Brightcove ’227 Products are available to businesses and individuals throughout the United States.

364. The Brightcove ’227 Products are provided to businesses and individuals located in Delaware.

365. By making, using, testing, offering for sale, and/or selling products and services for detecting occlusion and reducing halo effects in motion compensated pictures, including but not limited to the Brightcove ’227 Products, Brightcove has injured Dynamic Data and is liable to the Plaintiff for directly infringing one or more claims of the ’227 Patent, including at least claim 1 pursuant to 35 U.S.C. § 271(a).

366. Brightcove also indirectly infringes the ’227 Patent by actively inducing infringement under 35 USC § 271(b).

367. Brightcove has had knowledge of the ’227 Patent since at least service of this Complaint or shortly thereafter, and Brightcove knew of the ’227 Patent and knew of its infringement, including by way of this lawsuit.

368. Brightcove intended to induce patent infringement by third-party customers and users of the Brightcove ’227 Products and had knowledge that the inducing acts would cause infringement or was willfully blind to the possibility that its inducing acts would cause infringement. Brightcove specifically intended and was aware that the normal and customary use

of the accused products would infringe the '227 Patent. Brightcove performed the acts that constitute induced infringement, and would induce actual infringement, with knowledge of the '227 Patent and with the knowledge that the induced acts would constitute infringement. For example, Brightcove provides the Brightcove '227 Products that have the capability of operating in a manner that infringe one or more of the claims of the '227 Patent, including at least claim 1, and Brightcove further provides documentation and training materials that cause customers and end users of the Brightcove '227 Products to utilize the products in a manner that directly infringe one or more claims of the '227 Patent.[35] By providing instruction and training to customers and end-users on how to use the Brightcove '227 Products in a manner that directly infringes one or more claims of the '227 Patent, including at least claim 1, Brightcove specifically intended to induce infringement of the '227 Patent. Brightcove engaged in such inducement to promote the sales of the Brightcove '227 Products, e.g., through Brightcove user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '227 Patent. Accordingly, Brightcove has induced and continues to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the '227 Patent, knowing that such use constitutes infringement of the '227 Patent.

[35] *See, e.g.*, *Zencoder: VP9 Guide*, BRIGHTCOVE SUPPORT WEBSITE (last visited June 2019), *available at:* https://support.brightcove.com/zencoder-vp9-guide; David Sayed, *Get Ready For Ultra High Definition*, BRIGHTCOVE BLOG (April 14, 2016), *available at:* https://www.brightcove.com/en/blog/2016/04/get-ready-ultra-high-definition; *Zencoder Encoding Settings: Video*, BRIGHTCOVE SUPPORT WEBSITE (last visited June 2019), *available at:* https://support.brightcove.com/zencoder-encoding-settings-video; *Zencoder Encoding Settings: Video Processing*, BRIGHTCOVE SUPPORT WEBSITE (last visited June 2019), *available at:* https://support.brightcove.com/zencoder-encoding-settings-video-processing; *File Transcoding*, ZENCODER.COM WEBSITE (last visited June 2019), *available at:* https://zencoder.com/en/file-transcoding; and *Administering Video Cloud*, BRIGHTCOVE UNIVERSITY VIDEO COURSE (last visited June 2019), *available at:* https://university.brightcove.com/catalog/courses/512605.

369. The ’227 Patent is well-known within the industry as demonstrated by multiple citations to the ’227 Patent in published patents and patent applications assigned to technology companies and academic institutions. Brightcove is utilizing the technology claimed in the ’227 Patent without paying a reasonable royalty. Brightcove is infringing the ’227 Patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

370. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the ’227 Patent. As a result of Brightcove’s infringement of the ’227 Patent, Dynamic Data has suffered monetary damages, and seeks recovery in an amount adequate to compensate for Brightcove’s infringement, but in no event less than a reasonable royalty for the use made of the invention by Brightcove together with interest and costs as fixed by the Court.

COUNT XII
INFRINGEMENT OF U.S. PATENT NO. 6,639,944

371. Dynamic Data references and incorporates by reference the preceding paragraphs of this Complaint as if fully set forth herein.

372. Brightcove designs, makes, uses, sells, and/or offers for sale in the United States products and/or services for sub-pixel accurate motion vector estimation and motion-compensated interpolation or prediction.

373. Brightcove designs, makes, sells, offers to sell, imports, and/or uses products and/or services that decode content in compliance with the H.265 standard including at least the following products and services: Brightcove Video Cloud, Brightcove Enterprise Video Suite, Brightcove Player, and Brightcove OTT Flow (collectively, the “Brightcove ’944 Product(s)”).

374. One or more Brightcove subsidiaries and/or affiliates use the Brightcove ’944 Products in regular business operations.

375. One or more of the Brightcove ’944 Products include technology for sub-pixel accurate motion vector estimation and motion-compensated interpolation or prediction.

376. Brightcove has directly infringed and continues to directly infringe the ’944 Patent by, among other things, making, using, offering for sale, and/or selling technology for sub-pixel accurate motion vector estimation and motion-compensated interpolation or prediction, including but not limited to the Brightcove ’944 Products.

377. One or more of the Brightcove ’944 Products enable higher accuracy motion estimation at a lower cost through improvements in motion vector estimation and motion-compensated interpolation.

378. One or more of the Brightcove ’944 Products perform a method of generating an intermediate image using sub-pixel accurate motion vectors having vector components that may have non-integer values, from first and second images having a given mutual temporal distance, the intermediate image being at a fractional distance from said first image, said fractional distance being a fraction of said given mutual temporal distance.

379. One or more of the Brightcove ’944 Products perform a method that includes deriving first and second vectors from said sub-pixel accurate motion vectors.

380. One or more of the Brightcove ’944 Products perform a method that includes generating an intermediate image by combining first positions in a first image shifted over first vectors and second positions in said second image shifted over second vectors.

381. One or more of the Brightcove ’944 Products perform a method that includes deriving first and second vectors from sub-pixel accurate motion vectors by multiplying the vector

components of the sub-pixel accurate motion vectors by a fraction to obtain fractional vector components.

382. One or more of the Brightcove ’944 Products perform a method that includes deriving first and second vectors from sub-pixel accurate motion vectors by rounding the fractional vector components to obtain vector components of the first vectors, which have only integer vector components.

383. One or more of the Brightcove ’944 Products perform a method that includes deriving first and second vectors from sub-pixel accurate motion vectors by subtracting the first vector from the candidate vector to obtain the second vector, whereby the second vectors have vector components that, depending on the candidate vector and the fraction, may have non-integer values.

384. The Brightcove ’944 Products are available to businesses and individuals throughout the United States.

385. The Brightcove ’944 Products are provided to businesses and individuals located in Delaware.

386. By making, using, testing, offering for sale, and/or selling products and services for sub-pixel accurate motion vector estimation and motion-compensated interpolation or prediction, including but not limited to the Brightcove ’944 Products, Brightcove has injured Dynamic Data and is liable to the Plaintiff for directly infringing one or more claims of the ’944 Patent, including at least claim 2 pursuant to 35 U.S.C. § 271(a).

387. Brightcove also indirectly infringes the ’944 Patent by actively inducing infringement under 35 USC § 271(b).

388. Brightcove has had knowledge of the ’944 Patent since at least service of this Complaint or shortly thereafter, and Brightcove knew of the ’944 Patent and knew of its infringement, including by way of this lawsuit.

389. Brightcove intended to induce patent infringement by third-party customers and users of the Brightcove ’944 Products and had knowledge that the inducing acts would cause infringement or was willfully blind to the possibility that its inducing acts would cause infringement. Brightcove specifically intended and was aware that the normal and customary use of the accused products would infringe the ’944 Patent. Brightcove performed the acts that constitute induced infringement, and would induce actual infringement, with knowledge of the ’944 Patent and with the knowledge that the induced acts would constitute infringement. For example, Brightcove provides the Brightcove ’944 Products that have the capability of operating in a manner that infringe one or more of the claims of the ’944 Patent, including at least claim 2, and Brightcove further provides documentation and training materials that cause customers and end users of the Brightcove ’944 Products to utilize the products in a manner that directly infringe one or more claims of the ’944 Patent.[36] By providing instruction and training to customers and end-users on how to use the Brightcove ’944 Products in a manner that directly infringes one or more claims of the ’944 Patent, including at least claim 2, Brightcove specifically intended to

[36] *See, e.g.*, *Overview: Brightcove Player SDK for iOS*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/overview-brightcove-player-sdk-ios; *Brightcove Perform | Fast, Customizable HTML5 Video Player*, BRIGHTCOVE YOUTUBE VIDEO (July 5, 2016) *available at*: https://www.youtube.com/watch?v=1rrgHdzwjVU; *Native Video Playback*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/native-video-playback; *The Brightcove Native Player SDKs*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/brightcove-native-player-sdks; *Brightcove Playback API*, BRIGHTCOVE SUPPORT WEBSITE (last visited June 2019), *available at*: https://support.brightcove.com/playback-api; and *Zencoder DASH Streaming and Playlists*, *B*RIGHTCOVE SUPPORT WEBSITE (last visited June 2019), *available at*: https://support.brightcove.com/zencoder-dash-streaming-and-playlists.

induce infringement of the ’944 Patent. Brightcove engaged in such inducement to promote the sales of the Brightcove ’944 Products, e.g., through Brightcove user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the ’944 Patent. Accordingly, Brightcove has induced and continues to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the ‘944 Patent, knowing that such use constitutes infringement of the ’944 Patent.

390. The ’944 Patent is well-known within the industry as demonstrated by multiple citations to the ’944 Patent in published patents and patent applications assigned to technology companies and academic institutions. Brightcove is utilizing the technology claimed in the ’944 Patent without paying a reasonable royalty. Brightcove is infringing the ’944 Patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

391. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the ’944 Patent. As a result of Brightcove’s infringement of the ’944 Patent, Dynamic Data has suffered monetary damages, and seeks recovery in an amount adequate to compensate for Brightcove’s infringement, but in no event less than a reasonable royalty for the use made of the invention by Brightcove together with interest and costs as fixed by the Court.

COUNT XIII
INFRINGEMENT OF U.S. PATENT NO. 6,782,054

392. Dynamic Data references and incorporates by reference the preceding paragraphs of this Complaint as if fully set forth herein.

393. Brightcove designs, makes, uses, sells, and/or offers for sale in the United States products and/or services for motion estimation in a sequence of moving video pictures.

394. Brightcove designs, makes, sells, offers to sell, imports, and/or uses products and/or services that encode content in compliance with the H.265 standard including at least the following products and services: Brightcove Video Cloud, Brightcove Enterprise Video Suite, Brightcove Live, Brightcove OTT Flow, and Brightcove Zencoder (collectively, the "Brightcove '2054 Product(s)").

395. One or more Brightcove subsidiaries and/or affiliates use the Brightcove '2054 Products in regular business operations.

396. One or more of the Brightcove '2054 Products include technology for motion estimation in a sequence of moving video pictures.

397. Brightcove has directly infringed and continues to directly infringe the '2054 Patent by, among other things, making, using, offering for sale, and/or selling technology for motion estimation in a sequence of moving video pictures, including but not limited to the Brightcove '2054 Products.

398. One or more of the Brightcove '2054 Products increase the speed of convergence of motion vectors to improve the convergence process.

399. One or more of the Brightcove '2054 Products perform a method to enhance motion estimation that includes selecting a displacement vector as a best motion vector for a region in a field from a plurality of at least two candidate motion vectors by applying an error function to each of said plural candidate motion vectors, wherein the candidate motion vector with the least error is selected as the displacement vector for the region in the field.

400. One or more of the Brightcove '2054 Products perform a method to enhance motion estimation that includes an error function comprising a first penalty term that depends on a type of

the candidate motion vector and a second penalty term that depends on the position and size of the candidate motion vector.

401. The Brightcove ’2054 Products are available to businesses and individuals throughout the United States.

402. The Brightcove ’2054 Products are provided to businesses and individuals located in Delaware.

403. By making, using, testing, offering for sale, and/or selling products and services for motion estimation in a sequence of moving video pictures, including but not limited to the Brightcove ’2054 Products, Brightcove has injured Dynamic Data and is liable to the Plaintiff for directly infringing one or more claims of the ’2054 Patent, including at least claim 13 pursuant to 35 U.S.C. § 271(a).

404. Brightcove also indirectly infringes the ’2054 Patent by actively inducing infringement under 35 USC § 271(b).

405. Brightcove has had knowledge of the ’2054 Patent since at least service of this Complaint or shortly thereafter, and Brightcove knew of the ’2054 Patent and knew of its infringement, including by way of this lawsuit.

406. Brightcove intended to induce patent infringement by third-party customers and users of the Brightcove ’2054 Products and had knowledge that the inducing acts would cause infringement or was willfully blind to the possibility that its inducing acts would cause infringement. Brightcove specifically intended and was aware that the normal and customary use of the accused products would infringe the ’2054 Patent. Brightcove performed the acts that constitute induced infringement, and would induce actual infringement, with knowledge of the ’2054 Patent and with the knowledge that the induced acts would constitute infringement. For

example, Brightcove provides the Brightcove ’2054 Products that have the capability of operating in a manner that infringe one or more of the claims of the ’2054 Patent, including at least claim 13, and Brightcove further provides documentation and training materials that cause customers and end users of the Brightcove ’2054 Products to utilize the products in a manner that directly infringe one or more claims of the ’2054 Patent.[37] By providing instruction and training to customers and end-users on how to use the Brightcove ’2054 Products in a manner that directly infringes one or more claims of the ’2054 Patent, including at least claim 13, Brightcove specifically intended to induce infringement of the ’2054 Patent. Brightcove engaged in such inducement to promote the sales of the Brightcove ’2054 Products, e.g., through Brightcove user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the ’2054 Patent. Accordingly, Brightcove has induced and continues to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the ’2054 Patent, knowing that such use constitutes infringement of the ’2054 Patent.

407. The ’2054 Patent is well-known within the industry as demonstrated by multiple citations to the ’2054 Patent in published patents and patent applications assigned to technology companies and academic institutions. Brightcove is utilizing the technology claimed in the ’2054

[37] *See, e.g.*, David Sayed, *How To Get Started With UHD In Zencoder*, BRIGHTCOVE BLOG (May 2, 2016), *available at*: https://www.brightcove.com/en/blog/2016/05/how-get-started-uhd-zencoder; *Zencoder: HEVC/H.265 Guide*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/zencoder-hevch265-guide; *Zencoder Encoding Settings: Video*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/zencoder-encoding-settings-video; *Zencoder Encoding Settings: Format and Codecs*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/zencoder-encoding-settings-format-and-codecs; *Brightcove Zencoder: Complete Cloud Service For Video Encoding*, BRIGHTCOVE DATASHEET (2019); and Nathan Veer, *Conquer Live Streaming With An All-in-One Solution*, BRIGHTCOVE WEBINAR (last visited June 2019), *available at*: https://www.brightcove.com/en/webinars?videoId=6008933337001.

Patent without paying a reasonable royalty. Brightcove is infringing the '2054 Patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

408. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the '2054 Patent. As a result of Brightcove's infringement of the '2054 Patent, Dynamic Data has suffered monetary damages, and seeks recovery in an amount adequate to compensate for Brightcove's infringement, but in no event less than a reasonable royalty for the use made of the invention by Brightcove together with interest and costs as fixed by the Court.

COUNT XIV
INFRINGEMENT OF U.S. PATENT NO. 7,982,799

409. Dynamic Data references and incorporates by reference the preceding paragraphs of this Complaint as if fully set forth herein.

410. Brightcove designs, makes, uses, sells, and/or offers for sale in the United States products and/or services for interpolating an image information value for a pixel of an interline situated between two original image lines in an image.

411. Brightcove designs, makes, sells, offers to sell, imports, and/or uses products and/or services that encode content in compliance with the H.265 standard including at least the following products and services: Brightcove Video Cloud, Brightcove Enterprise Video Suite, Brightcove Live, Brightcove OTT Flow, and Brightcove Zencoder (collectively, the "Brightcove '799 Product(s)").

412. One or more Brightcove subsidiaries and/or affiliates use the Brightcove '799 Products in regular business operations.

413. One or more of the Brightcove ’799 Products include technology for interpolating an image information value for a pixel of an interline situated between two original image lines in an image.

414. Brightcove has directly infringed and continues to directly infringe the ’799 Patent by, among other things, making, using, offering for sale, and/or selling technology for interpolating an image information value for a pixel of an interline situated between two original image lines in an image, including but not limited to the Brightcove ’799 Products.

415. One or more of the Brightcove ’799 Products reduce or prevent ambiguities in the determination of an optimal image direction by adding a single direction values of several adjacent pixels.

416. One or more of the Brightcove ’799 Products enable a method for interpolation of an image information value for a pixel of an interline that includes selecting from a number of image directions, to each of which a direction quality value is assigned, a direction of interpolation by comparing the direction quality values.

417. One or more of the Brightcove ’799 Products enable a method for interpolation of an image information value for a pixel of an interline that includes determining the image information value being interpolated in dependence on image information values assigned to pixels lying adjacent to the pixel being interpolated in the direction of interpolation.

418. One or more of the Brightcove ’799 Products enable a method for interpolation of an image information value for a pixel of an interline that includes ascertaining a direction quality value for an image direction by selecting a pixel group having at least two pixels.

419. One or more of the Brightcove ’799 Products enable a method for interpolation of an image information value for a pixel of an interline that includes ascertaining a direction quality

value for an image direction by determining a single direction quality value for each pixel of the pixel group, the single direction quality value being dependent on image information values assigned to image regions lying adjacent to the particular pixel of the group in the image direction.

420. One or more of the Brightcove ’799 Products enable a method for interpolation of an image information value for a pixel of an interline that includes ascertaining a direction quality value for an image direction by creating the direction quality value as a function of the single direction quality values of the pixel group.

421. The Brightcove ’799 Products are available to businesses and individuals throughout the United States.

422. The Brightcove ’799 Products are provided to businesses and individuals located in Delaware.

423. By making, using, testing, offering for sale, and/or selling products and services for interpolating an image information value for a pixel of an interline situated between two original image lines in an image, including but not limited to the Brightcove ’799 Products, Brightcove has injured Dynamic Data and is liable to the Plaintiff for directly infringing one or more claims of the ’799 Patent, including at least claim 1 pursuant to 35 U.S.C. § 271(a).

424. Brightcove also indirectly infringes the ’799 Patent by actively inducing infringement under 35 USC § 271(b).

425. Brightcove has had knowledge of the ’799 Patent since at least service of this Complaint or shortly thereafter, and Brightcove knew of the ’799 Patent and knew of its infringement, including by way of this lawsuit.

426. Brightcove intended to induce patent infringement by third-party customers and users of the Brightcove ’799 Products and had knowledge that the inducing acts would cause

infringement or was willfully blind to the possibility that its inducing acts would cause infringement. Brightcove specifically intended and was aware that the normal and customary use of the accused products would infringe the '799 Patent. Brightcove performed the acts that constitute induced infringement, and would induce actual infringement, with knowledge of the '799 Patent and with the knowledge that the induced acts would constitute infringement. For example, Brightcove provides the Brightcove '799 Products that have the capability of operating in a manner that infringe one or more of the claims of the '799 Patent, including at least claim 1, and Brightcove further provides documentation and training materials that cause customers and end users of the Brightcove '799 Products to utilize the products in a manner that directly infringe one or more claims of the '799 Patent.[38] By providing instruction and training to customers and end-users on how to use the Brightcove '799 Products in a manner that directly infringes one or more claims of the '799 Patent, including at least claim 1, Brightcove specifically intended to induce infringement of the '799 Patent. Brightcove engaged in such inducement to promote the sales of the Brightcove '799 Products, e.g., through Brightcove user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the '799 Patent. Accordingly, Brightcove has induced and continues to induce users of

[38] *See, e.g.*, David Sayed, *How To Get Started With UHD In Zencoder*, BRIGHTCOVE BLOG (May 2, 2016), *available at*: https://www.brightcove.com/en/blog/2016/05/how-get-started-uhd-zencoder; *Zencoder: HEVC/H.265 Guide*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/zencoder-hevch265-guide; *Zencoder Encoding Settings: Video*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/zencoder-encoding-settings-video; *Zencoder Encoding Settings: Format and Codecs*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/zencoder-encoding-settings-format-and-codecs; *Brightcove Zencoder: Complete Cloud Service For Video Encoding*, BRIGHTCOVE DATASHEET (2019); and Nathan Veer, *Conquer Live Streaming With An All-in-One Solution*, BRIGHTCOVE WEBINAR (last visited June 2019), *available at*: https://www.brightcove.com/en/webinars?videoId=6008933337001.

the accused products to use the accused products in their ordinary and customary way to infringe the ’799 Patent, knowing that such use constitutes infringement of the ’799 Patent.

427. The ’799 Patent is well-known within the industry as demonstrated by multiple citations to the ’799 Patent in published patents and patent applications assigned to technology companies and academic institutions. Brightcove is utilizing the technology claimed in the ’799 Patent without paying a reasonable royalty. Brightcove is infringing the ’799 Patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

428. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the ’799 Patent.

429. As a result of Brightcove’s infringement of the ’799 Patent, Dynamic Data has suffered monetary damages, and seeks recovery in an amount adequate to compensate for Brightcove’s infringement, but in no event less than a reasonable royalty for the use made of the invention by Brightcove together with interest and costs as fixed by the Court.

COUNT XV
INFRINGEMENT OF U.S. PATENT NO. 8,442,118

430. Dynamic Data references and incorporates by reference the preceding paragraphs of this Complaint as if fully set forth herein.

431. Brightcove designs, makes, uses, sells, and/or offers for sale in the United States products and/or services for obtaining transformation parameters.

432. Brightcove designs, makes, sells, offers to sell, imports, and/or uses products and/or services that decode content in compliance with the H.265 standard including at least the following

products and services: Brightcove Video Cloud, Brightcove Enterprise Video Suite, Brightcove Player, and Brightcove OTT Flow (collectively, the "Brightcove '118 Product(s)").

433. One or more Brightcove subsidiaries and/or affiliates use the Brightcove '118 Products in regular business operations.

434. One or more of the Brightcove '118 Products include technology for obtaining transformation parameters.

435. Brightcove has directly infringed and continues to directly infringe the '118 Patent by, among other things, making, using, offering for sale, and/or selling technology for obtaining transformation parameters, including but not limited to the Brightcove '118 Products.

436. One or more of the Brightcove '118 Products reduce the processing capacity associated with obtaining transformation parameters from a vector field.

437. One or more of the Brightcove '118 Products enable a method of obtaining transformation parameters from a vector field with an image processing device that includes receiving a video image from a video source, the video image having consecutive video frames.

438. One or more of the Brightcove '118 Products enable a method of obtaining transformation parameters from a vector field with an image processing device that includes obtaining, with a processor, the vector field from the video image.

439. One or more of the Brightcove '118 Products enable a method of obtaining transformation parameters from a vector field with an image processing device that includes projecting, with the processor, the vector field on at least one axis.

440. One or more of the Brightcove '118 Products enable a method of obtaining transformation parameters from a vector field with an image processing device that includes deriving, with the processor, the transformation parameters from the projection of the vector field.

441. One or more of the Brightcove ’118 Products enable a method of obtaining transformation parameters from a vector field with an image processing device that includes compressing, with the processor, the video image using the transformation parameters.

442. One or more of the Brightcove ’118 Products enable a method of obtaining transformation parameters from a vector field with an image processing device that includes storing the compressed video image on a non-transitory computer-readable medium.

443. The Brightcove ’118 Products are available to businesses and individuals throughout the United States.

444. The Brightcove ’118 Products are provided to businesses and individuals located in Delaware.

445. By making, using, testing, offering for sale, and/or selling products and services for obtaining transformation parameters, including but not limited to the Brightcove ’118 Products, Brightcove has injured Dynamic Data and is liable to the Plaintiff for directly infringing one or more claims of the ’118 Patent, including at least claim 1 pursuant to 35 U.S.C. § 271(a).

446. Brightcove also indirectly infringes the ’118 Patent by actively inducing infringement under 35 USC § 271(b).

447. Brightcove has had knowledge of the ’118 Patent since at least service of this Complaint or shortly thereafter, and Brightcove knew of the ’118 Patent and knew of its infringement, including by way of this lawsuit.

448. Brightcove intended to induce patent infringement by third-party customers and users of the Brightcove ’118 Products and had knowledge that the inducing acts would cause infringement or was willfully blind to the possibility that its inducing acts would cause infringement. Brightcove specifically intended and was aware that the normal and customary use

of the accused products would infringe the ’118 Patent. Brightcove performed the acts that constitute induced infringement, and would induce actual infringement, with knowledge of the ’118 Patent and with the knowledge that the induced acts would constitute infringement. For example, Brightcove provides the Brightcove ’118 Products that have the capability of operating in a manner that infringe one or more of the claims of the ‘118 Patent, including at least claim 1, and Brightcove further provides documentation and training materials that cause customers and end users of the Brightcove ’118 Products to utilize the products in a manner that directly infringe one or more claims of the ’118 Patent.[39] By providing instruction and training to customers and end-users on how to use the Brightcove ‘118 Products in a manner that directly infringes one or more claims of the ’118 Patent, including at least claim 1, Brightcove specifically intended to induce infringement of the ’118 Patent. Brightcove engaged in such inducement to promote the sales of the Brightcove ’118 Products, e.g., through Brightcove user manuals, product support, marketing materials, and training materials to actively induce the users of the accused products to infringe the ’118 Patent. Accordingly, Brightcove has induced and continues to induce users of the accused products to use the accused products in their ordinary and customary way to infringe the ’118 Patent, knowing that such use constitutes infringement of the ’118 Patent.

[39] *See, e.g.*, *Overview: Brightcove Player SDK for iOS*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/overview-brightcove-player-sdk-ios; *Brightcove Perform | Fast, Customizable HTML5 Video Player*, BRIGHTCOVE YOUTUBE VIDEO (July 5, 2016) *available at*: https://www.youtube.com/watch?v=1rrgHdzwjVU; *Native Video Playback*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/native-video-playback; *The Brightcove Native Player SDKs*, BRIGHTCOVE DOCUMENTATION (last visited June 2019), *available at*: https://support.brightcove.com/brightcove-native-player-sdks; *Brightcove Playback API*, BRIGHTCOVE SUPPORT WEBSITE (last visited June 2019), *available at*: https://support.brightcove.com/playback-api; and *Zencoder DASH Streaming and Playlists*, *B*RIGHTCOVE SUPPORT WEBSITE (last visited June 2019), *available at*: https://support.brightcove.com/zencoder-dash-streaming-and-playlists.

449. The ’118 Patent is well-known within the industry as demonstrated by multiple citations to the ’118 Patent in published patents and patent applications assigned to technology companies and academic institutions. Brightcove is utilizing the technology claimed in the ’118 Patent without paying a reasonable royalty. Brightcove is infringing the ’118 Patent in a manner best described as willful, wanton, malicious, in bad faith, deliberate, consciously wrongful, flagrant, or characteristic of a pirate.

450. To the extent applicable, the requirements of 35 U.S.C. § 287(a) have been met with respect to the ’118 Patent.

451. As a result of Brightcove’s infringement of the ’118 Patent, Dynamic Data has suffered monetary damages, and seeks recovery in an amount adequate to compensate for Brightcove’s infringement, but in no event less than a reasonable royalty for the use made of the invention by Brightcove together with interest and costs as fixed by the Court.

PRAYER FOR RELIEF

WHEREFORE, Dynamic Data respectfully requests that this Court enter:

A. A judgment in favor of Dynamic Data that Brightcove has infringed, either literally and/or under the doctrine of equivalents, the ’3054, ’918, ’175, ’177, ’039, ’112, ’529, ’230, ’450, ’426, ’227, ’944, ’2054, ’799, and ’118 Patents;

B. An award of damages resulting from Brightcove’s acts of infringement in accordance with 35 U.S.C. § 284;

C. A judgment and order finding that Brightcove’s infringement was willful, wanton, malicious, bad-faith, deliberate, consciously wrongful, flagrant, or

characteristic of a pirate within the meaning of 35 U.S.C. § 284 and awarding to Dynamic Data enhanced damages.

D. A judgment and order finding that this is an exceptional case within the meaning of 35 U.S.C. § 285 and awarding to Dynamic Data its reasonable attorneys' fees against Brightcove.

E. Any and all other relief to which Dynamic Data may show themselves to be entitled.

JURY TRIAL DEMANDED

Pursuant to Rule 38 of the Federal Rules of Civil Procedure, Dynamic Data Technologies, LLC requests a trial by jury of any issues so triable by right.

Dated: June 24, 2019

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