IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLORADO

UNILOC 2017 LLC,
A Delaware Corporation,

Plaintiff,

v.

SLING TV L.L.C.,
A Colorado limited liability company,

Defendant.

Case No. 1:19-CV-00278-RBJ

JURY TRIAL DEMANDED

FIRST AMENDED COMPLAINT FOR PATENT INFRINGEMENT AND JURY DEMAND

Plaintiff Uniloc 2017 LLC ("Uniloc"), by and through the undersigned counsel, hereby files this First Amended Complaint and makes the following allegations of patent infringement relating to U.S. Patent Nos. 6,519,005, 6,895,118, 9,721,273 and 8,407,609 against Sling TV L.L.C. ("Sling TV") and alleges as follows upon actual knowledge with respect to itself and its own acts and upon information and belief as to all other matters:

NATURE OF THE ACTION

1. This is an action for patent infringement. Uniloc alleges that Sling TV infringes U.S. Patent Nos. 6,519,005 (the "'005 patent"), 6,895,118 (the "'118 patent") 9,721,273 (the "'273 patent") and 8,407,609 (the "'609 patent") copies of which are attached hereto as Exhibits A-D (collectively, "the Asserted Patents").

2. Uniloc alleges that Sling TV directly infringes the Asserted Patents by making, using, offering for sale, selling and/or importing products and services, such as Sling TV that: (1) perform a method for motion coding an uncompressed digital video data stream; (2) perform a method of coding a digital image comprising macroblocks in a binary data stream (3) perform a method for providing content via a computer network and a computer system and (4) track digital

media presentations. Uniloc seeks damages and other relief for Sling TV's infringement of the Asserted Patents.

THE PARTIES

3. Uniloc 2017 LLC is a Delaware corporation having places of business at 1209 Orange Street, Wilmington, Delaware 19801 and 620 Newport Center Drive, Newport Beach, California 92660.

4. Uniloc holds all substantial rights, title and interest in and to the Asserted Patents.

5. Upon information and belief, Defendant Sling TV, L.L.C., is Colorado corporation with an office at 9601 S. Meridian Blvd., Englewood, Colorado 80112. Sling TV may be served through its registered agent for service: Timothy Allen Messner at 9601 S. Meridian Blvd., Englewood, Colorado 80112

JURISDICTION AND VENUE

6. This action for patent infringement arises under the Patent Laws of the United States, 35 U.S.C. § 1 et. seq. This Court has original jurisdiction under 28 U.S.C. §§ 1331 and 1338.

7. This Court has both general and specific jurisdiction over Sling TV because Sling TV is a Colorado corporation and has committed acts within Colorado giving rise to this action and has established minimum contacts with this forum such that the exercise of jurisdiction over Sling TV would not offend traditional notions of fair play and substantial justice. Sling TV, directly and through subsidiaries, intermediaries (including distributors, retailers, franchisees and others), has committed and continues to commit acts of patent infringement in this District, by, among other things, making, using, testing, selling, licensing, importing and/or offering for sale/license products and services that infringe the Asserted Patents.

8. Venue is proper in this district and division under 28 U.S.C. §§ 1391(b)-(d) and 1400(b) because Sling TV has committed acts of infringement in Colorado.

COUNT I – INFRINGEMENT OF U.S. PATENT NO. 6,519,005

9. The allegations of paragraphs 1-8 of this First Amended Complaint are

incorporated by reference as though fully set forth herein.

10. The ’005 patent, titled “Method of Concurrent Multiple-Mode Motion Estimation For Digital Video,” issued on February 11, 2003. A copy of the ’005 patent is attached as Exhibit A. The priority date for ’005 patent is April 30, 1999. The inventions of the ’005 patent were developed by inventors at Koninklijke Philips Electronics N.V.

11. Pursuant to 35 U.S.C. § 282, the ’005 patent is presumed valid.

12. Claim 1 of the ’005 patent reads as follows:

> 1. A method for motion coding an uncompressed digital video data stream, including the steps of:
>
> comparing pixels of a first pixel array in a picture currently being coded with pixels of a plurality of second pixel arrays in at least one reference picture and concurrently performing motion estimation for each of a plurality of different prediction modes in order to determine which of the prediction modes is an optimum prediction mode;
>
> determining which of the second pixel arrays constitutes a best match with respect to the first pixel array for the optimum prediction mode; and,
>
> generating a motion vector for the first pixel array in response to the determining step.

13. The invention of claim 1 of the ’005 patent concerns “digital video compression” and, more particularly, “a motion estimation method and search engine for a digital video encoder that is simpler, faster, and less expensive than the presently available technology permits, and that permits concurrent motion estimation using multiple prediction modes.” ’005 patent at 1:6-11.

14. Data compression is the encoding of data using fewer “bits” than the original representation. Data compression is useful because it reduces the resources required to store and transmit data, and allows for faster retrieval and transmission of video data.

15. In the context of digital video with which the ’005 patent is concerned, a video codec is electronic circuitry or software that compresses and/or decompresses digital video for storage and/or transmission. Video codecs refer to video encoders and decoders.

16. Prior to digital video, video was typically stored as an analog signal on magnetic tape. Then, around the time of the development of compact discs (CDs), it became more feasible

to store and convey video in digital form. However, a large amount of storage and communications bandwidth was needed to record and convey raw video. Thus, what was needed was a method to reduce the amount of data used to represent the raw video. Accordingly, numerous engineers and many companies worked to develop solutions for compressing digital video data.

17. "Practical digital video compression started with the ITU H.261 standard in 1990." *A Brief History of Video Coding*, ARC International, Marco Jacobs and Jonah Probell (2007). Numerous other video compression standards thereafter were created and evolved. The innovation in digital video compression continues to this day.

18. In April 1999, at the time of the invention of claim 1 of the '005 patent, "different compression algorithms ha[d] been developed for digitally encoding video and audio information (hereinafter referred to generically as the 'digital video data stream') in order to minimize the bandwidth required to transmit this digital video data stream for a given picture quality." '005 patent at 1:11-17.

19. At the time of the invention of claim 1 of the '005 patent, the "most widely accepted international standards [for compression of digital video for motion pictures and television were] proposed by the Moving Pictures Expert Group (MPEG)." '005 patent at 1:20-24. Two such standards that existed at the time of the invention were MPEG-1 and MPEG-2.

20. In accordance with MPEG-1 and MPEG-2—and other compression standards for digital video—the video stream is "encoded/compressed . . . using a compression technique generally known as 'motion coding.'" '005 patent at 1:40-44. More particularly, rather than transmitting each video frame in its entirety, the standards at the time used motion estimation for only those parts of sequential pictures that varied due to motion, where possible. '005 patent at 1:45-48.

21. In general, the picture elements or "pixels" within a block of a picture are specified relative to those of a previously transmitted reference or "anchor" picture using differential or "residual" video, as well as so-called "motion vectors" that specify the location of an array (e.g.,

16-by-16) of pixels or "macroblock" within the current picture relative to its original location within the anchor picture. '005 patent at 1:48-55. A macroblock is a unit in image and video compression that typically consists of 16x16 samples of pixels. A motion vector is used to represent a macroblock in a picture based on the position of that same or similar macroblock in another picture (known as the reference picture).

22. At the time of the invention, there were various "prediction modes" that could be used for each macroblock that was to be encoded. '005 patent at 3:7-11. Prediction modes are techniques for predicting image pixels or groups of pixels, and examples of prediction modes in MPEG include frame and field prediction modes. '005 patent at 4:64-67. Moreover, at that time, motion coding allowed for the use of different prediction modes within the same frame, but required one prediction mode to be specified for a macroblock in advance of performing the motion estimation that results in a motion vector. '005 patent at 3:12-15. Given that there are multiple prediction modes, the optimum prediction mode could not be known prior to encoding unless multiple motion estimations were performed on each macroblock sequentially. '005 patent at 3:15-20. Then, after determining the optimum prediction mode based on multiple and sequential motion estimations, the optimal prediction mode would be selected and only then would the motion estimation that results in the generation of a motion vector occur.

23. In this prior art method, numerous and sequential motion estimations would have to run to find the optimal prediction mode. Only after these sequential motion estimations have been run and the optimal prediction mode selected could the motion estimation that results in the motion vector for the macroblock be carried out. Because "motion estimation usually consists of an exhaustive search procedure in which all 256 pixels of the two corresponding macroblocks are compared, and which is repeated for a large number of macroblocks," having to sequentially run numerous motion estimations to find the optimal prediction mode and only then performing the motion estimation using the optimal prediction mode to generate the motion vector is very computationally intensive, complex, inefficient, lengthy and cost ineffective. '005 patent at 3:20-43.

DOCKET ALARM

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