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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

UNIFIED PATENTS INC.,
Petitioner

v.

DYNAMIC DATA TECHNOLOGIES, LLC,
Patent Owner

Case No. IPR2019-01085
Patent No. 8,135,073

PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 8,135,073

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I. Introduction

Petitioner Unified Patents Inc. ("Petitioner" or "Unified") respectfully requests *inter partes* review ("IPR") of Claims 1-4, 6-8, 14, 16, 18-21 (collectively, the "Challenged Claims") of U.S. Patent 8,135,073 ("the '073 Patent," Ex. 1001).

The '073 Patent describes systems and methods for decoding video data that includes determining a re-mapping strategy for video enhancement of a first video frame and re-using the same re-mapping strategy to enhance a second frame within the same video stream. This method of re-using a re-mapping strategy was known long before the '073 Patent, as shown by both *Yang* (Ex. 1004) and *Paik* (Ex. 1005), as discussed in more detail below. The Challenged Claims are therefore obvious over the prior art and should be found unpatentable.

II. Summary of the Patent

A. Technology Background

Digital video is formed from a sequence of individual video frames that include pixel data. *See Freedman Decl.* (Ex. 1003) at ¶ 34 (citing *Richardson* (Ex. 1009) at 36-38). Each frame is an array of pixels organized in rows and columns to form the image represented by the frame, where the pixels reflect characteristics of objects represented in a scene of a video. *Richardson* (Ex. 1009) at 36-38. These rows and columns of pixels are generally divided into small regions called "blocks" of data. *Id.* As shown below, each frame is a table or matrix of pixels, i.e., pixels in

rows and columns form an image represented by the frame. *Richardson* (Ex. 1009) at 10-11, 17-19. The pixel data reflects characteristics of objects represented in a scene of the video, such as shapes and edges. *Id*. at 10, 33; *see also Freedman Decl*. (Ex. 1003) at ¶ 34.

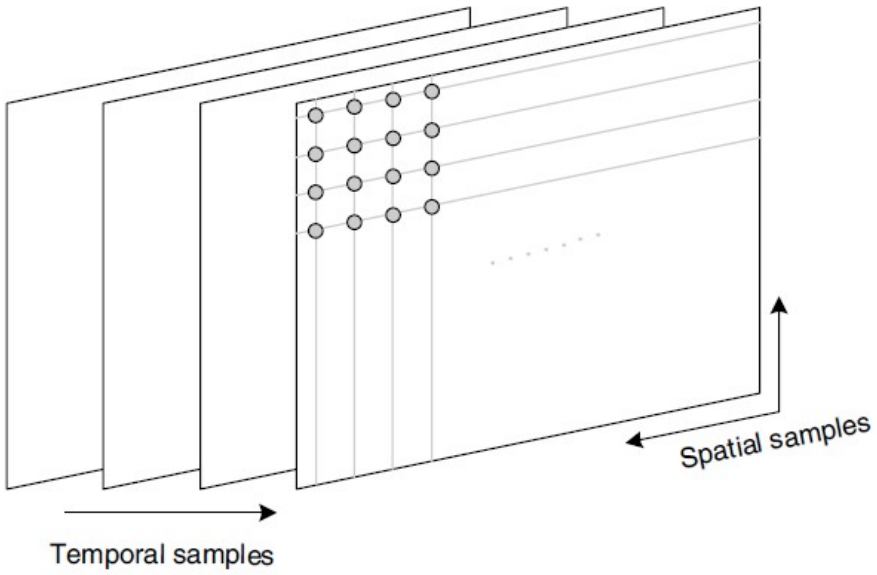

Figure 2.2 Spatial and temporal sampling of a video sequence

Richardson (Ex. 1009) at Fig. 2.2.

Digital video files can be large due to the large amounts of image data associated with each frame. *Id*. at 2-5. To efficiently transmit them to end-user devices for quick playback, video coding techniques are used to compress (i.e. encode) video files for efficient transmission and later receipt and decompression (i.e., decoding), followed by output at an end-user display device. *Id*. Such compression is achieved, in part, by removing redundancy in and between frames. *Id*. at ¶ 35. Specifically, within a particular sequence of video images, individual

frames can be correlated to benefit from redundant video information from within a given frame (spatial correlation) and from successive frames captured at around the same time (temporal correlation):

Figure 3.2 Spatial and temporal correlation in a video sequence

Richardson (Ex. 1009) at 53, Fig. 3.2.

Many aspects of video coding were well-known long before the '073 Patent, including region-based video coding that use prediction techniques to remove spatial and temporal redundancy in coded video data. *See '073 Patent* (Ex. 1001) at 2:20-33. As acknowledged in the '073 Patent (and illustrated in Fig. 3.2 above), it was a well-known aspect of the Moving Picture Experts Group or "MPEG-2" standard (adopted in 1996) to encode video frames using spatial prediction within a single

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