Image Registration of Real-Time Broadcast Video using the UltraSONIC Reconfigurable Computer

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Abstract. This paper is concerned with the image registration problem as applied to real-time video. It describes the development of a computationally efficient algorithm to restore broadcast quality video sequences using image registration techniques. A motion vector based approach is used and found to be successful in restoring the video sequence for any global perspective transform based distortion. The algorithm is implemented on a reconfigurable computing platform called UltraSONIC in a hardware/software codesign environment. It is shown that the algorithm can accurately restore video data in real-time.