SkEyesCam

The SkEyesCam is a revolutionary system that, when mounted on any moving platform, returns stable, vibration-free video irrespective of the vehicle's motion. While stabilizing the picture as accurately as gimbals, SkEyesCam isolates high and low frequency vibration without any moving parts.

SkEyesCam consists of a wide field of view "fisheye" imager, an inertial measurement unit, and unwarping hardware. Using precise orientation data from the IMU, the SkEyesCam rectifies and unwarps the fisheye image, generating a stabilized view as seen by a conventional pinhole camera with chosen characteristics (view angle, focal length, resolution, etc.). By maintaining a tight synchronization between the imager and the IMU, the high speed unwarping hardware accurately stabilizes the motion of the SkEyesCam in real time, with results far more impressive and robust than traditional software stabilization approaches.

SkEyesCam incorporates a built-in WiFi access point giving any computer with a wireless card access to real-time image streams from the system. Remote users can focus on, zoom in, pan, and tilt on any portion of the scene they wish to observe. Multiple users may wirelessly log into the SkEyesCam web-based interface and independently and simultaneously monitor different regions of the scene -- essentially as if having separately steerable sensors in one package. Since there are no mechanical parts involved in the image stabilization process, and therefore no appreciable delay between image acquisition and image presentation, the remote users never lose sight of their targets, and are not subject to the disorienting effects associated with mechanical platforms.

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SkEyesCam camera enclosure and processor.

Typical SkEyesCam original image.

Stabilized image of a portion of the scene

SkEyesCam Specifications	
Power:	**Communications:**
9-18 V, 40 W	10/100 Base T and wireless connectivity
Imager:	802.11 a/b/g wireless standard
SXGA 1392x1040 pixels	
185º field of regard	**Control:**
Up to 15 frames per second	Web-based control and video interface
Stabilization bandwidth: 1000º/s	Pan, tilt, and zoom
10 separately commanded video streams	Shutter speed
H. 264 output format	White balance
Physical Characteristics:	Reset to defaults
Dimensions: 6" x 6" x 4", weight < 8 pounds	