Technology *Opportunity*

Image Processing Technology

Advanced Video and Image Editing Tool

NASA's Marshall Space Flight Center (MSFC) is offering licenses for its video image stabilization and registration (VISAR) software. VISAR's dramatic video editing and enhancement capabilities can revolutionize broadcast quality post-production. However, its ease of use also makes it a perfect tool for the consumer market. With built-in modularity, VISAR can be provided as a stand-alone, plug-in, or fully integrated component. Developed for the FBI's investigation of the 1996 bombing at the Atlanta Olympics, VISAR has been successfully used in many high-profile investigations and has also been featured on CNN, ABC News, the Discovery Channel, Court TV, and America's Most Wanted.

Benefits

- Stabilizes images against moving backgrounds, even if foreground and background move at different rates
- Minimizes effects of unwanted camera movements including jitter, rotation and zoom
- Sharpens moving objects and corrects for their rotation
- Enhances clarity by co-adding frames for low light or video noise (snow)
- Smoothes jagged edges of images
- Readily transportable code (C++)
- Easily detachable brightness/contrast, de-interlace, and zoom functions
- Multi-standard support, including NTSC and HDTV

Commercial Applications

- Professional video editing for broadcast quality post-production
- News, media, and corporate video and image editing and special effects
- Near real-time video stabilization for sporting events, including instant replay
- Consumer video and image editing
- Law enforcement and security videos
- Medical and scientific imaging
- Industrial applications (robotics and machine vision)
- Microscopic tracking of cell or crystal activity

Marshall Space Flight Center

For More Information

If you would like more information about VISAR, please contact:

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The Technology

Developed at NASA Marshall Space Flight Center (MSFC), NASA's VISAR technology allows users to dramatically improve videotape sequences and still images. VISAR's patented process for registering and enhancing images is unique among image stabilization techniques.

VISAR improves clarity by co-adding images, removing noise and random brightness fluctuations. This process is especially effective in images generated under low-light conditions. VISAR not only removes motion blur but also corrects for objects moving, or even rotating, within the scene. Whereas other stabilization techniques can remove only horizontal or vertical movements such as camera jitter, VISAR can also remove unwanted camera rotation or zoom effects.

Currently in use for law enforcement, military, surveillance, and medical applications, VISAR has been issued two patents to date (U.S. 6,459,822 and 6,560,375), and has been honored with the 2002 NASA Commercial Invention of the Year award, 2002 Federal Lab Consortium's Excellence in Technology Transfer Award, and placement in the 2001 Space Technology Hall of Fame.

Combining unique capabilities with superior quality, VISAR is a significant improvement over other stabilization systems, with potential application across a wide user base—from broadcast, post-production, and film professionals to corporations, government agencies, educators, and consumers.

With highly portable code and modular user interface and sub-functions, VISAR can easily be run as a stand-alone application, modified to run as a plug-in, or integrated into a full video editing or image processing suite. VISAR will help to differentiate these video or image software packages by providing high-end capabilities easily incorporated into mid-range or consumer editing or special effects systems. In addition, VISAR has significant potential for supporting Web streaming, consumer digital cameras, and mobile video.

Commercial Opportunities

This technology is part of NASA's technology commercialization program, which seeks to stimulate commercial use of NASA-developed technologies. Interested companies should submit a patent license application and commercialization plan to MSFC.