

The Acadia Video-GPS: Real-Time Video Geo-Location Intelligence for Military Decision-Making

The Acadia Video-GPS system is a powerful advancement in video intelligence gathering and interpretation. A real-time, fully-automatic video geo-positioning system, Acadia-GPS simultaneously adds geographical context and corrects for narrow views and poor video quality. Acadia Video-GPS creates highly useful targeting and intelligence information from the raw video acquired in today's military and surveillance operations. UAV ground station personnel can now determine the location of all objects and features visible in the video while the video is streaming, providing valuable input for tactical decision-making.

UNIQUE REAL-TIME VIDEO SURVEILLANCE AND TARGETING

Acadia Video-GPS automatically merges video surveillance data with Engineering Support Data (ESD) including the location and time data of the vehicle, UAV, or aircraft, with reference images - to provide real-time context for landmarks and objects. By electronically removing jitter from the video, and creating mosaic panoramas to provide broad scene context, the Acadia Video-GPS converts the UAV's shaky, narrow view (soda-straw) video feed into a useful tactical tool.

The Acadia Video-GPS is portable, and can be quickly located in UAV Ground Stations and other strategic control centers.

BASED ON SARNOFF'S PATENTED TECHNOLOGY

Acadia Video-GPS is based on Sarnoff Corporation's patented Acadia I™: the world's most powerful, single chip vision integrated circuit. The system also incorporates patented, state-of-the-art geo-location technology, partially developed under DARPA sponsorship.

The Acadia Video-GPS employs a multi-step process to calculate coordinates of designated targets or objects of interest. It accurately measures frame-to-frame motion information, then stitches the frames together electronically into a panorama, which is overlaid onto calibrated reference imagery. This provides robust information for the personnel interpreting an otherwise confusing stream of imagery.



FEATURES OF ACADIA VIDEO-GPS

UNMATCHED FUNCTIONALITY

- Selected by US Government for integration in UAV programs

COMPACT PACKAGE

- Portable, self-contained PC-based design, saves space

COMPLETE SOLUTION

- Hardware and software included

REAL-TIME PERFORMANCE

- Provides ESD updates approximately every 1 second

IMAGE STABILIZATION

- Works even from a moving platform (electronic stabilization)

IMAGE MOSAICING

- Creates seamless panoramas from video, in real-time

LOW COST

- Replaces large, expensive specialized vision systems

EASY TO USE

- Simple user interface for designating targets and interpreting output

Acadia Video-GPS System Specifications

VIDEO INPUT

- RS-170, S-Video, NTSC and PAL

ESD INPUT

- Supports various formats of Engineering Support Data (ESD)
- Closed caption encoding (Predator) Vertical Blanking Interval (VBI)
- MPEG-2 KLV anticipated

VIDEO OUTPUT

- RS-170, RGB, S-Video, NTSC or PAL

SYSTEM LATENCY

- Approximately 1 second per update

PROCESSING RATE

- Frame rate - 30 frames/sec (60 fields/sec)

IMAGE STABILIZATION

- Targets even in presence of arbitrary camera motion (translation, rotation, dilation or shear)

PRODUCT APPLICATIONS

- Military systems, video based
- UAV Ground Stations
- Targeting Systems and Fire Control

ACADIA VIDEO-GPS HARDWARE COMPONENTS

- Acadia I Vision Accelerator PCI hardware
- IBM-compatible PC running Windows-2000 or later



Ordering information:

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