IMPROVING SITUATIONAL AWARENESS

VideoScout® is a family of interoperable Commercial Off the Shelf (COTS) solutions that enable military personnel to create and share intelligent video for mission planning, mission execution, battle damage assessment, targeting and overall situational awareness. Deployed in theatre, VideoScout provides the capability to capture, archive and retrieve video and metadata from Intelligence, Surveillance and Reconnaissance (ISR) systems, Unmanned Aerial Vehicles (UAV), common sensors, and INTEL feeds. Warfighters can easily add “knowledge” to the video assets by annotating, making clips or extracting images to create and share intelligent video that is more timely, actionable and relevant to their mission.

VideoScout’s Windows®-based user environment provides an easy to use, common interface and interoperability with other Windows applications to support and integrate with established intelligence systems. Operators can become productive with VideoScout within minutes.

MOBILE AND EMBEDDED USERS

VideoScout is available in several lightweight, mobile configurations for embedded and dismounted personnel who require direct access to live video to make real-time decisions and improve mission planning while “on the move”. Available configurations include ruggedized mobile laptops with integrated multi-band receivers and portable, “pocket-size” hand-held computers with an integrated receiver. These “all-in-one” systems are designed to put a full remote video exploitation solution directly into the hands of embedded personnel, alleviating the need for additional equipment when weight, size and space limitations are critical. By providing users with direct access to video and metadata, mobile personnel can better leverage video from UAVs and other ISR assets to support mission planning, mission execution and INTEL operations in the field.

VideoScout offers direct “plug and play” connectivity with Electro Optical (EO)-Infrared (IR) sensors, as well as fixed or mobile receivers to capture live digital or analog video and metadata. VideoScout can synchronize and archive video with UAV metadata to create “geo-location rich” video intelligence by associating time and location with both motion and still imagery. Captured metadata is stored with the video, and is extracted and displayed separate from the video for convenient search and retrieval by date, location or textual annotations.

Exploit Your Video. Anywhere.
VIDEOSCOUT

VideoScout is integrated with FalconView®, a Windows-based mapping system that displays maps and geo-referenced overlays for mission planning and support. Easily accessible from within the VideoScout user interface, personnel can synchronize metadata and video with FalconView maps to create geo-location smart video. VideoScout automatically plots a UAV's location, field of view and path on the map which can be displayed adjacent to the video. By moving the cursor over a specific area on a map, VideoScout allows users to quickly identify locations of interest and automatically find and display all instances of video that includes the requested locations. Corresponding lat/long, date/time, and annotations are also displayed, providing convenient geo-referenced video and map information in a single screen format.

VideoScout is also integrated with Google Earth™, providing mobile users with the ability to correlate live or play-back video and metadata to cached Google Earth imagery to display vehicle track, sensor to image viewpoint, target on trail and vehicle altitude. Users can view the trail from an airborne sensor to image viewpoint, showing the exact field of view and camera look angle. All rotational views, altitude changes and heading rotations are retained during live or playback viewing.

Incoming live video and metadata can be viewed using VideoScout’s full DVR (TIVO-like) capabilities, allowing personnel to pause, reverse, fast forward and play to help them find, focus and act upon critical live imagery. Simultaneously, VideoScout can record live video, providing a complete archived source for further use and analysis.

While capturing and archiving, VideoScout can stream the incoming video for simultaneous viewing by others. Streamed video may be scaled to reach mobile personnel with bandwidth-constrained system resources. Personnel can also annotate and store key images or create segments along with metadata, while leaving the original video intact. The resulting derivative intelligent video and images representing the most critical information can then be transmitted and shared with others across the battlespace, helping create a greater tactical advantage. All original video data, derivative video and images, and associated metadata are stored and remain available on VideoScout, and can be shared anytime during a mission, for post mission analysis and for future mission planning.

GROUND MOBILITY VEHICLES

HMMV users installed the integrated VideoScout-Rover receiver to capture locally launched UAV video, as well as vehicle mounted EO-IR sensor systems. Incoming video can be paused and rewound for immediate analysis, and even streamed to other vehicles in the convoy in real-time, and annotated, recorded and indexed for subsequent search and review. When required, VideoScout-MC can be easily detached from the Rover for “over the hill” INTEL operations, providing forward personnel with the ability to receive, exploit, manage and store video and metadata directly from tactical L, S and C-band SUAS (Small Unmanned Aerial Systems) while on foot.
TACTICAL OPERATIONS CENTERS

Tactical Operations Centers (TOC) access video and metadata from a variety of sources. VideoScout's interoperability enables TOC and CAOC personnel to easily connect to networks such as GBS (Global Broadcast Service), SIPRNET, Television feeds and communications systems such as TCDL and Rover III. VideoScout allows personnel at any TOC location to capture and create actionable and reusable video intelligence that enhances a common tactical picture to support mission planning, improve mission effectiveness and enhance post mission analysis.

VideoScout helps users pinpoint locations, people and areas of interest, and create video intelligence to distribute across the battlespace. Incoming video feeds and metadata (KLV, serial data, etc.) can be recorded and simultaneously analyzed, or scheduled for unattended recording at specified times. Key video and images can be disseminated to others for immediate action or to provide "lessons learned" for mission review and future mission planning.

Compound search capabilities allow users to locate and retrieve specific video images, clips and segments based on multiple criteria. Users can find video and images by entering lat/lon, date/time, text, annotations, or any combination thereof to display desired video and metadata for quick viewing, management and plotting.

VideoScout's streaming option allows users to transmit video to other locations for simultaneous viewing, supporting real-time collaboration across the theater of operations. Shorter derivative video can also be extracted from long video missions and then transmitted to VideoScout through user-selected bandwidths, helping get critical video intelligence from the TOC to forward locations.

TACTICAL OPERATIONS CENTERS

Users in a TOC connect VideoScout to the GBS and set it to automatically record scheduled Predator missions as well as television feeds. This application also includes PAL-based television feeds from host nation services (i.e. Al Jazeera). Live Predator missions are paused and reviewed using DVR capabilities. Textual annotations are made, key snapshots are extracted from the video, and a short, one-minute segment is created from the original three-hour mission. The new, shorter, video segments, images and metadata are forwarded to other theater support commands, field operators and real echelon Command Centers.
quickly. Video can also be streamed at lower transmission rates to accommodate users with minimal bandwidth options. Video and images can easily be sent across existing tactical networks via Ethernet or USB connections.

VideoScout’s easy to use interface empowers anyone to create and annotate snapshots or shorter video segments on the fly, without destroying the original video files. Critical motion imagery and JPEG/NITF files with associated metadata and annotations can be stored on VideoScout for easy search, retrieval and playback, or burned to DVD media for storage, retrieval and transport.

INTELLIGENCE NETWORKS AND EXPLOITATION SYSTEMS

VideoScout’s component level software and hardware are available for integration into existing C4ISR systems to provide video and image management and processing capabilities for intelligence networks (e.g. JWICS, SIRPNET, etc.) and systems (e.g. JDISS, GCCS TEG, TACLAN, TES, DCGS, etc.). All VideoScout capabilities for capture, metadata extraction, archiving, annotation, search, retrieval, dissemination, DVR functionality, and CPU off-loading are available for these configurations.

VideoScout facilitates the military’s move to digital video by on-board support for standard MPEG-2 compression/decompression that can be configured for a variety of bandwidths and metadata standards such as KLV. INTEL analysts can identify key images or video segments of interest and annotate, store and disseminate relevant video intelligence to assist force commands in tactical operations, strike planning and detection and location of targets. Shorter, derivative video and images can also be used and distributed to others to support battle damage assessment for mission planning and intelligence support.

VideoScout’s software and hardware components support open systems standards as well as DoD standards such as DoDIIS. The components can be readily integrated into networked systems, helping extend the value of those systems by adding advanced digital and analog video capabilities. In addition, multiple video processing cards may be installed in a server configuration to accommodate simultaneous video capture and archiving from multiple platforms and sensors.
SOFTWARE FEATURES

- **Receive** L, S or Full C band waveforms while on-the-move.
- **Capture** video and metadata (location, date/time, other flight data, etc.) and interface to Google Earth, FalconView or other mapping software in real-time.
- **Display** live incoming video and metadata or play back archived video and metadata. A convenient night mode option allows users to display video while operating in light-sensitive areas.
- **Pause, rewind and fast forward** (DVR capabilities) on live or previously recorded video to improve analysis in slow, normal or fast speed.
- **View paused or DVR video** and real-time video simultaneously. Analyze any part of the mission while monitoring live action. DVR up to 90 minutes of video.
- **Enhance the video** by normalizing the light/dark content of video and images in live mode. Edge sharpening, pixel enhancement and image point magnification are also provided.
- **Create snapshots** of selected “frames of interest” in live mode or after the video has been captured (with all corresponding metadata). Store snapshots as JPEG or NITF files.
- **Annotate** an entire video file, segment or snapshot with insightful notes using the chalkboard or keyboard feature. Chalkboard features include: drawing, symbology, freehand and free style tools; color, line and text change options; retention and transmission of image notations; and JPEG and NITF format options.
- **Zoom** in on selected areas within an image or on full motion video. Scrolling capabilities allows users to move across video while remaining in zoom mode.
- **Pan on video** by dragging (moving) the center video image across the screen to any other point on the screen to quickly isolate an area of interest.
- **Create shorter derivative video** (MPEG-2) by simply marking the start and stop points, then create a new, high value video segment for storage and transmission.
- **Search, retrieve and play** segments, snapshots and videos by searching on file name, user-entered annotation or metadata, such as location or times. Video can then be played from the exact point you want.
- **Compound Search** on MGRS, lat/long, date/time, annotation, text, or any combination of these to quickly retrieve video, clips or snapshots for quick viewing, analysis and dissemination.
- **Storyboard** layout of snapshots, segments and video files for a more intuitive way to view data and manage video assets.
- **Schedule** automatic encoding of incoming video at designated “start and stop” times.
- **Transmit** entire captured video, segments and snapshots along with annotations across any computer network.
- **Store video**, snapshots and segments on network accessible drives and CDs or DVDs for alternative transport and storage.
- **Stream video** for automatic transmission in real-time. Frame rates, bit rates and resolutions are user selectable to allow for efficient low-bandwidth transmission.
- **Customize** the user interface to suit specific preferences and display set-ups. Simply select, drag and drop parts of an application and lay them out in a way that works best for you.
- **Support for Standards**
  - MPEG-2 Video
  - JPEG, NITF Images
  - KLV Metadata
  - DODIIS Compliance for Secure Networks
  - FalconView
  - Google Earth

PORTABLE GROUND CONTROL STATION FOR UAVS

A UAS manufacturer is enhancing the video collection and management value of their system by using VideoScout as a Ground Control System (GCS) and Remote Video Terminal (RVT). By integrating FalconView mapping/mission planning software, and the UAV communications software into VideoScout, users can not only fly the air vehicle, but also digitally record the mission, use DVR features to pause and rewind the live video feed, capture the metadata, take digital snapshots and annotate them, stream the video to others over any IP based network, and record the mission for subsequent review and analysis.
FLEXIBLE CONFIGURATIONS TO SUIT MULTIPLE NEEDS

Remote Video Exploitation Terminal (RVT) VideoScout-MC
A lightweight, portable VideoScout laptop for mobile, forward and dismounted personnel to receive video and telemetry data directly from L, S and C-band tactical UAVs.

Integrated Video Exploitation and Management VideoScout-Flex
VideoScout hardware and software components are available for system users or systems integrators looking to integrate VideoScout capabilities into their own choice of computer or existing system configuration.

Micro Exploitation System VideoScout-MXR
A hand-held, micro video exploitation and management system. It features a fully integrated multi-band receiver capable of capturing and leveraging real-time full-motion video and metadata directly from L, S or C band based Intelligence, Surveillance and Reconnaissance (ISR) sensors, including Manned and Unmanned Aerial Systems (UAS).

INTEROPERABLE, OPEN AND STANDARDS BASED
VideoScout is a fully interoperable system, capable of receiving imagery data of all types and from any source. It runs in a Windows environment, making other common applications such as email, Word®, PowerPoint®, chat, and Internet communications operable on the same system. Mission critical applications such as Ground Control Station (GCS), targeting and FalconView software are also compatible. Compute-intensive video processing functions are performed on a dedicated, integrated video/image processing board, off-loading the system’s main CPU to provide more capacity for multiple applications. This improves performance and reduces the need for additional computer systems where space and weight constraints are critical.

For additional information, visit our website at www.L-3com.com/iec

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Headquartered in New York City, L-3 Communications is a prime system contractor in aircraft modernization and maintenance, C3ISR (Command, Control, Communications, Intelligence, Surveillance and Reconnaissance) systems and government services. L-3 is also a leading provider of high technology products, systems and subsystems.