Catalina®

Multimedia Management Server

Extensible architectures.
Enterprise-level capacity.

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UNMANNED AIRCRAFT SYSTEMS

Catalina is a sophisticated server-side software powering your media enterprise. The server application subscribes to and ingests data from a wide variety of sources, can improve both the imagery and metadata, and indexes the data for easy discovery—all in a standards-compliant manner.

KEY BENEFITS & FEATURES

Built for Linux or Windows, Catalina features a vast library of capabilities to provide all the thrust needed to command your metadata-rich media:

- Connect to any MISB-compliant video and metadata source to collect, index, and record mission-critical media and metadata.
- Computer vision and metadata processing capabilities to extract, improve, edit, or delete information contained in your media or metadata.
- Disseminate your data as files or streams, or access them directly through our SOAP or Rest APIs using your own systems and software.
- Secure access to capabilities and data using TLS, SSL, and certificate-based security protocols and methods.

Flexible deployment

A single Catalina instance can easily handle dozens of simultaneous feeds and operations, and additional instances can be deployed to support co-located scaling or distributed operations.

Catalina features:

- 3D Scene Reconstruction
- Extensible, Plug-in Architecture
- Media Catalog
- Metadata Filtering & Editing
- MISB-Compliant Formats & Standards
- Optical Character Reader/Manipulation
- Reticle™ Georegistration
- Still Image and Video Mosaicking
- Visual Enhancements

1.3 MILLION FLIGHT HOURS

50 GLOBAL SITES OF OPERATION

MODULAR FAMILY OF SYSTEMS

SERVICES, ACQUISITION AND FMS

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Catalina®

Multimedia Management Server

	GCS	SERVER	WORKSTATION	LAPTOP
TacitView	✓		✓	✓
Catalina	✓	✓	✓	✓

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SPECIFICATIONS

COMMUNICATIONS

- RTP
- TCP
- UDP
- UDP Multicast
- OpenSRT (Secure Reliable Transport)
- Support for custom interfaces
- IPv4
- IPv6

INTEGRATION

- SOAP
- REST
- GCC
- Visual Studio
- Visual C++
- Visual Basic
- Visual C#
- Java and NetBeans

METADATA

- KLV (SMPTE 336M-2001)
- Predator ESD
- Cursor on Target (CoT)
- MISB EG 0104
- MISB Standard 0601
- MISB Standard 0102
- MISB Standard 1010
- MISB Standard 1107
- STANAG 4609
- MISB Standard 604

IMAGE FORMATS

- NITF (MIL-STD-2500C)
- Bitmap, JPEG, PNG, TIFF
- JPEG 2000
- STANAG 4545
- KMZ
- GeoTIFF
- GeoPDF

VIDEO

- MPEG-2/H.262
- MPEG-4/H.263
- AVC/H.264
- HEVC/H.265

AUDIO

- MPEG-2 (MP2 and MP3)
- AAC

STREAM FORMATS

- MPEG-2 Program Stream
- MPEG-2 Transport Stream

ARCHITECTURES

- Windows
- Linux

Virtualization support

LICENSABLE FEATURES

Baseline
This feature is required by all other Catalina licensable/optional features and provides for basic input and output of received video streams. Provides access to the Catalina SOAP API.

3D Scene Reconstruction
Enables the construction of a 3D textured model and point cloud from uncalibrated still images or motion imagery clips. Can optionally use metadata to improve geolocation and scaling of the reconstruction, if available.

Annotation
Enables the association of vector- and text-based annotations to media stored in Catalina. Annotations may have geospatial properties and are retrievable through the Catalina API. Requires Catalog and Archive feature.

Catalog and Archive
Cataloging (indexing) and archiving (storing) motion imagery and other media for retrieval through OGC Catalog and OGC Filter services through common SOAP/REST methods. Supports SQL Server (license not included) and PostgreSQL databases.

GeoSpatial Data Export
Export live platform and frame locations as a network KML. Viewable in Google Earth and other KML-enabled viewing clients.

HEVC Codec
Enables ingest of HEVC/H.265 formatted MPEG2-TS video files and UDP streams for Catalog and Archive. With Video Transcoding license, also enables transcoding MPEG2-TS files and UDP streams into HEVC/H.265 format.

Landmark
Produces real-time, video-rate, high-precision positioning metadata using computer vision techniques to generate a 3D structure-and-appearance model of the target location. This eliminates the need for sensor calibration or reference imagery and elevation data.

Metadata Transcoding
Enables all KLV metadata encoding/decoding features necessary to convert between standards-based metadata types, or add/modify/delete existing metadata fields. Handles STANAG 4609 and MISB standards.

Metadata Guard
Javascript-based feature enables a scriptable media firewall based on the presence and/or contents of MISB metadata.

On-Screen Metadata Burn-in
Draws frame-based annotation overlays on video from dynamic metadata elements or static entries from user defined templates. Requires Video Transcoding feature; TacitView recommended.

On-Screen OCR
Converts on-screen characters into MISB-compliant KLV metadata. Pre-defined templates available upon request and user-defined templates can be authored with this Javascript-based solution. Requires Metadata Transcoding feature; TacitView recommended.

On-Screen Metadata Inpainting
Obscures on-screen characters using surrounding pixel data. Requires Video Transcoding feature; TacitView recommended.

On-Screen Metadata Redacting
Censors on-screen characters with a specified overlay color. Requires Video Transcoding feature; TacitView recommended.

Reticle Real Time (RT)
Enables the Real Time (RT) mode of the Reticle georegistration engine. This mode improves metadata by leveraging low-latency image tracking, sparse 3D modeling, and image-to-image correlation to lock motion imagery to reference imagery and terrain. Generates correlation metadata to quantify accuracy of solution. Includes Reticle Metadata Optimizer.

Reticle Target (TGT)
Enables the target (TGT) mode of the Reticle georegistration engine. Provides the confidence level of the georegistration for a selected point within Motion Imagery to aide targeting decisions. Includes Reticle MO and RT. Requires TacitView.

Still Image Mosaicking
Builds ortho-image mosaics from a series of related still images. Leverages embedded camera position data (EXIF or an accompanying XML file) to optimize the geospatial accuracy of the ortho-image.

Visual Enhancements
Enables debanding, dehazing, contrast enhancement, stabilization, and super resolution features. Requires Video Transcoding feature.

Video Mosaicking
Generates mosaics from motion imagery in a batch process. Uses geopositioning metadata and image data to determine viable segments of video, and optimizes the output mosaics. Exports images in multiple formats including geospatial.

Video Transcoding
Required for all video encoding/decoding features necessary to convert between compression formats, adjust compression quality, adjust bit-rate, selectively drop frames, and modify frame sizes. HEVC Codec licensed separately. DASH/HLS encoding requires Catalog and Archive feature.

Software is classified as EAR99.

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