DEFENSE

Mission Critical Video Solutions

Rugged. Compliant. Video & Metadata.

HAIVISION

DEFENSE CERTIFIED

MIL-STD-810

DO-160

STANAG COMPLIANT

MISP COMPLIANT

DODIN APL CERTIFIED

COMMON CRITERIA CERTIFIED

HAIVISION

Rugged. Compliant. Video & Metadata.

With high quality, low latency, and best-in-class security, Haivision's full motion video (FMV) solutions power Intelligence, Surveillance, and Reconnaissance (ISR) applications to deliver situational awareness and enable extraction of intelligence from motion imagery.

Deployed by governments worldwide, Haivision's Commercial Off-The-Shelf (COTS) products meet strict military environmental standards to ensure reliability in the harshest environments and adherence to industry standards assuring interoperability and IA compliance throughout the ISR ecosystem.

LAND | SEA | AIR

Video for Any Platform

Situational Awareness

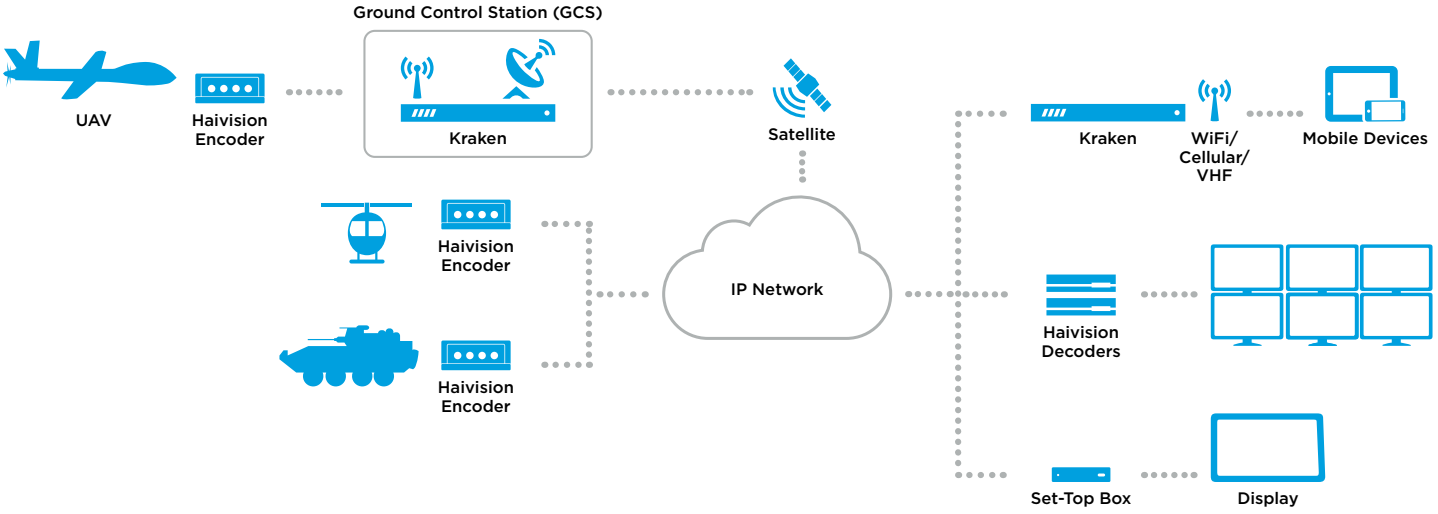
CONNECT YOUR BATTLEFIELD AND EXPAND INTELLIGENCE SHARING FOR IMPROVED SITUATIONAL AWARENESS AND DECISION MAKING

HAIVISION

Speed, Quality & Compliance

Haivision's cutting-edge hardware video encoders, software-based transcoding engines, and decoding platforms deliver ultra low latency FMV with Key-Length-Value (KLV) metadata from any sensor to any operator, analyst or decision maker, whether stationary or mobile.

Built for rugged environments, Haivision's Makito and Kraken solutions are often positioned with the sensor to optimize video quality and preserve interoperability from the source.



Higher Quality, Less Bandwidth

Designed for ISR platforms and video backhaul systems, Haivision's HEVC/H.265 and AVC/H.264 encoders help to optimize video and metadata transmission over disadvantaged datalinks. In addition, Haivision's transcoding engine enables live AVC/H.264 to HEVC/H.265 and HEVC/H.265 to AVC/H.264 transcoding to reduce bandwidth usage over constrained datalinks, while maintaining compatibility with existing AVC/H.264 infrastructures.

Interoperable Metadata

Haivision streaming solutions support industry standard SMPTE KLV metadata transport within MPEG-2 transport streams, ensuring both MISB and STANAG compliance. Metadata is captured via serial port, ethernet or synchronously with the video over SDI.

KLV and video synchronization is preserved by leveraging the MPEG-2 transport stream Presentation Timestamps (PTS), allowing receivers to resynchronize the metadata with the correct video frame.

Additionally, Haivision solutions now offer mechanisms for reducing bandwidth consumption over severely constrained pipes through metadata decimation and filtering. By decimating the rate at which the KLV source is sampled and filtering so that only selected KLV elements or tags are transmitted within the transport stream, available bandwidth can be even further optimized to provide the best support for mission critical applications.

DODIN APL CERTIFIED

Haivision video distribution solutions are Department of Defense, Information Network Approved Products List (DoDIN APL) certified. The DoDIN APL certification is the gold standard for network security and ensures our solutions have met extensive security and interoperability testing requirements.

- **Haivision Media Platform & Haivision Media Gateway**
- **Haivision Play Set Top Boxes**
- **Makito X4 and Makito X Encoders and Decoders**
- **Makito X1 Rugged Encoder**
- **Kraken Transcoder**

DODIN APL REFERENCE # TN 2118301

Ruggedized Streaming for Contribution

Haivision's ruggedized multi-channel video encoders transport ultra low latency, high-quality, HEVC/H.265 and AVC/H.264 video for mission critical ISR applications.

MAKITO X4 RUGGED VIDEO ENCODER

Haivision's next generation HEVC/H.265 and AVC/H.264 low-latency video encoder features eight powerful encoding cores and KLV metadata support for real-time delivery of motion imagery from ISR platforms in the most demanding environments. Supports up to four 3G-SDI inputs or a single 4K/UHD source.

MAKITO X1 RUGGED VIDEO ENCODER

Ultra-compact HEVC/H.265 and AVC/H.264 low latency video encoder and OEM board for real-time streaming of MISB/STANAG compliant full motion video for use with tactical radios, wearables and small platforms.

Full Motion Video Appliances

Haivision's family of HEVC/H.265 and AVC/H.264 encoders and decoders deliver a complete video solution offering the highest quality and lowest latency alongside the security and reliability of a field-proven feature set.

MAKITO X4 VIDEO ENCODER

Haivision's next generation 4K HEVC/H.265 and AVC/H.264 live video encoder for ultra low latency streaming over IP, supports up to four 3G-SDI inputs, or a single 4K/UHD source, and KLV metadata. Available as a standalone appliance or rack-mountable blade.

MAKITO X4 VIDEO DECODER

The Haivision Makito X4 Video Decoder is a versatile real-time 4K/UHD HEVC / H.265 and AVC / H.264 video decoder. Available as an appliance or blade the Makito X4 Decoder is capable of decoding live video SRT, UDP, and RTP streams at extremely low latency.

MAKITO X VIDEO ENCODER

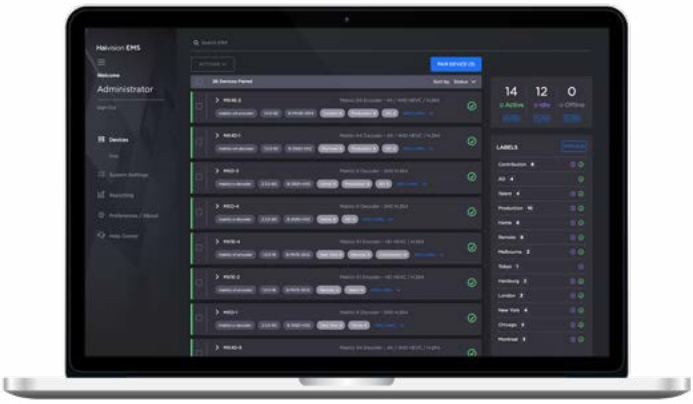
Available as a compact SDI or DVI AVC/H.264 encoding appliance as well as a blade that can be installed in a high density rack-mountable chassis. Supports ultra low latency streaming for up to 1080p60 video.

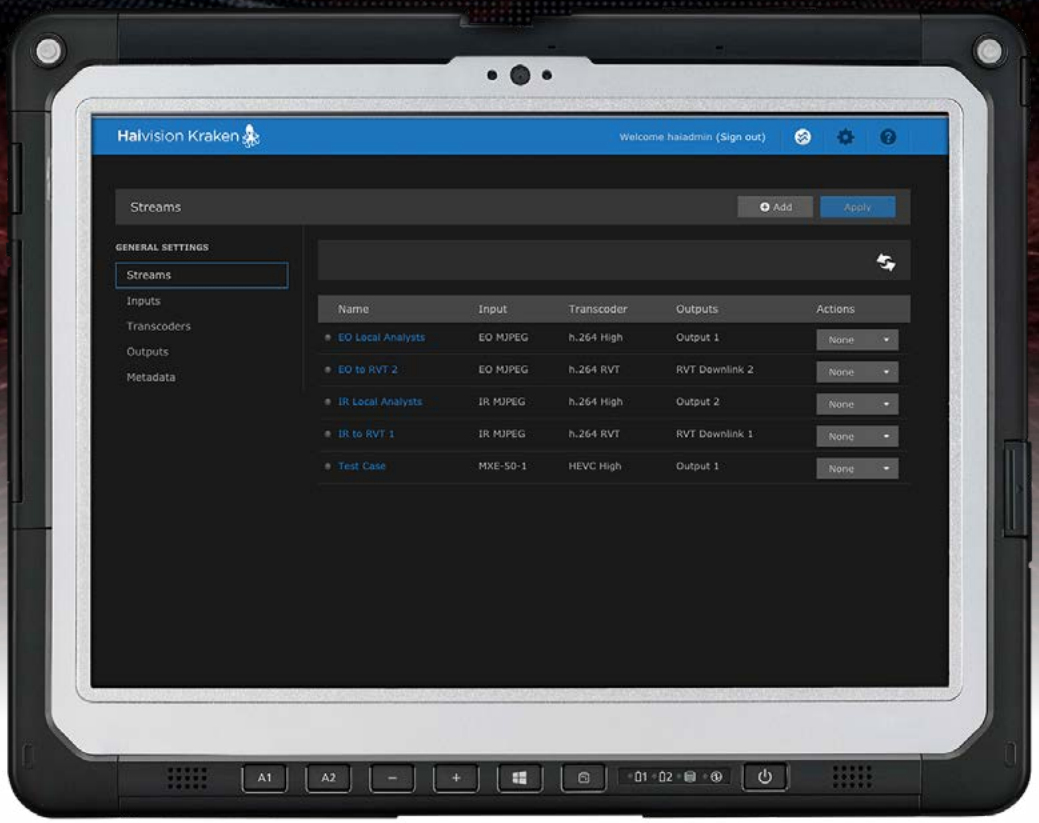
MAKITO X HARSH FANLESS VIDEO ENCODER

An industrial-grade fanless appliance with the trusted Makito X feature set designed for high operating temperature environments.

HAIVISION EMS

An intuitive web-based interface enables systems administrators and users to configure and manage Makito video encoders and decoders from anywhere. The Haivision EMS element management system can be used to organize and group devices with custom tags, monitor their status in real-time and perform firmware upgrades from a central location.





The Most Powerful Transcoder for Mission-Critical Video

KRAKEN

Kraken is a video transcoder for ISR, situational awareness, and field monitoring applications that optimizes video networks by transcoding full motion video (FMV) using the latest compression standards for the highest possible quality, even in environments where network bandwidth is unpredictable or limited.

With Kraken, send the highest quality video and ensure streams meet your target network capacity. Kraken preserves and aggregates MISB and STANAG-compliant KLV metadata, while filtering out unnecessary fields to make the most of available bandwidth. Kraken provides the lowest latency, highest quality real-time video stream transmission while assuring compatibility with downstream processing, exploitation, dissemination systems.

KRAKEN CERTIFIED PARTNERS

From tactical communication kits to centralized data centers, Kraken VM gives users the capability to deploy a complete low latency encoding and transcoding solution on their existing systems. Haivision has certified Kraken installation on hardware from several strategic partners, including:

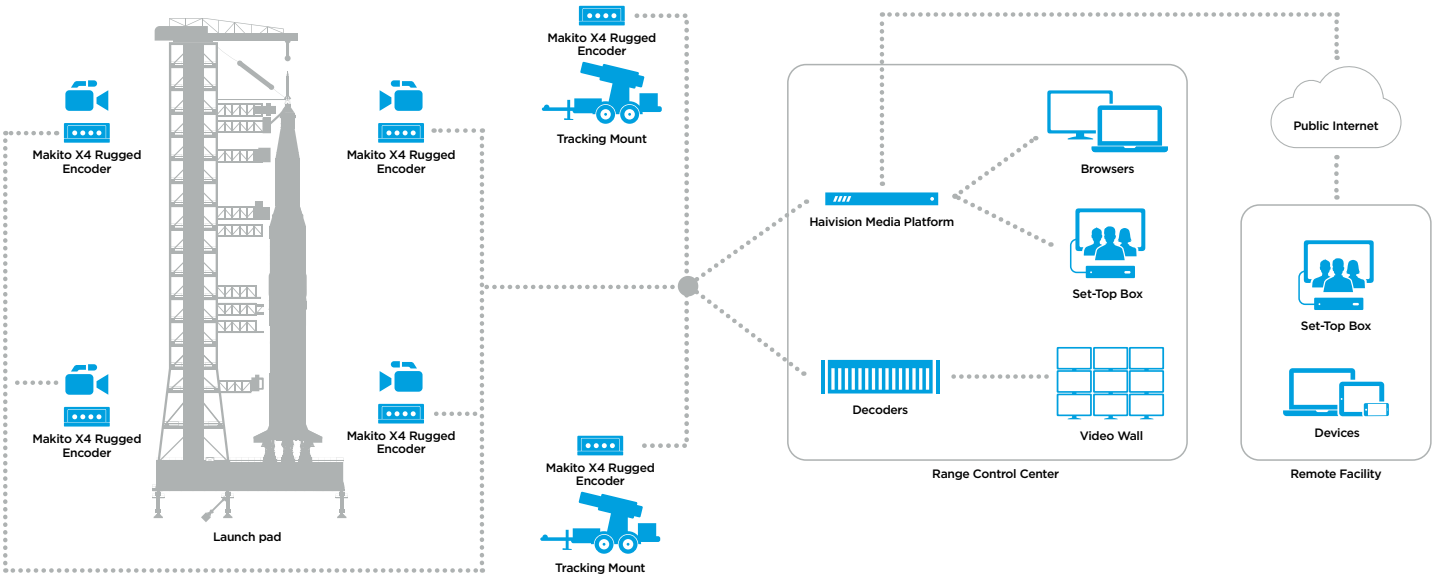
ADC ARNOUSE DIGITAL DEVICES CORP · KLAS · mildef · PacStar · SUB U SYSTEMS · CUBIC

Video Management for Mission Critical Applications

Haivision Media Platform (HMP) is a powerful solution for managing operational content and enabling live monitoring, recording, and aggregation of high-quality full motion video (FMV). With low latency multi-view playback, secure multi-site live video distribution, and an unparalleled security posture, HMP is ideally suited for any mission critical use case.

HIGH-CAPACITY RECORDING AND LOW LATENCY VIEWING PLATFORM WITH LIVE REVIEW

The HMP configuration is specifically geared towards applications requiring high-capacity recording and low latency viewing of mission critical video. Workgroup's recently introduced Live Review feature allows for pausing live motion imagery, scrubbing back to, and replaying, earlier moments, and quickly sharing with teams as needed – all while continuing to record incoming video feeds and facilitating improved decision making in surveillance, tactical monitoring, command and control, and training applications.



Example launch monitoring workflow

SITUATIONAL AWARENESS

HMP offers secure low latency viewing options on TV monitors, desktop browsers, and mobile devices as situations unfold. Live Review provides a safety net in the event that a viewer misses a critical occurrence in the moment.

COMMAND AND CONTROL (C2)

HMP provides highly scalable video recording capable of aggregating hundreds of live full motion video sources. The solution displays multiple live streams simultaneously, ensuring operations are supported with synchronized real-time imagery to a variety of endpoints.

AFTER ACTION REPORTS (AAR)

HMP features include: hotmarking live video for later recall, metadata tagging for classification, and video trimming and clipping. The platform simplifies the process of aggregating video content across hundreds of recorded video feeds, so that they can be easily shared with key stakeholders for assessment, planning, and action.

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HIGH QUALITY

Haivision's solutions have optimized implementations of HEVC/H.265 and AVC/H.264 algorithms to deliver the high-quality video demanded by the ISR community, every time.

LOW LATENCY

Configurable control to deliver the lowest latency video while overcoming network challenges to assist with real time decision making.

DEPENDABILITY

With thousands of units fielded, millions of flight hours logged, and 10+ years serving the ISR community, Haivision's solutions have proven themselves in the most demanding applications, time and time again.

SECURE RELIABLE TRANSPORT (SRT)

Protect against jitter, packet loss and bandwidth fluctuation, while preserving the best video quality possible and securely delivering your content with open source SRT.

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