Tungsten
Software Development Kit (SDK)

Building blocks for powerful still and motion imagery media applications

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Our Tungsten media toolkit is ideal for companies and platforms that demand flexible, superior, real-time digital media solutions. Tungsten is designed for software developers and offers an extensive C++ Application Programming Interface (API) to operate on media from a range of sources including cameras, network streams, archives, and more.

KEY FEATURES & BENEFITS

Versatile architecture
Ideal for systems that require the capability to ingest, process, and deliver a large number of streams of video, audio, metadata, and annotation with minimal latency.

Highly-adaptable, layered capabilities

- Encoding and decoding
- Recording and playback
- Advanced content-based retrieval and analysis that can handle simultaneous media sources across many platforms

Comprehensive bundle of sample applications

- Full-featured media client and server
- Remote server management application
- Media-streaming application

Provides the foundation to unleash the full potential of digital media

- Build client-side, metadata-rich media consumption and server software
- Digitally encode motion imagery and metadata to MISB standards using encoding libraries and MainConcept codecs—no need for specialized video encoding hardware
- Decode digital motion imagery and metadata for use directly in your software
- Make your solution MISB and STANAG compliant with core components including MISB metadata set libraries, Cursor-on-Target encoders/decoders, NITF libraries and video codecs
- Currently used in numerous cross domain solutions to meet NSA Raise the Bar requirements

1.4 MILLION FLIGHT HOURS	50 GLOBAL SITES OF OPERATION	MODULAR FAMILY OF SYSTEMS	SERVICES, ACQUISITION AND FMS

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Simplify projects
and accelerate time to market

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ENCODING & DECODING

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

Audio
- MPEG-1/2 (MP3)
- AAC

Metadata
- KLV (SMPTE 336M-2001)
- Cursor on Target (CoT)

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

INTEROPERABILITY
- Motion Imagery Standards Profile (MISP)
- STANAG 4609
- Cross Platform Support
- Customizable Interfaces

GIS UTILITIES
- Digital Elevation Models—DTED / SRTM / GTOPO30
- Four Corners Calculations
- Coordinate System and Height Conversions
- Geometric Types – WKT/WKB

MEDIA TRANSPORT
- TCP
- UDP – Unicast / Multicast
- RTP / RTSP
- File
- Sliced File
- Archives
- JPIP
- Surge Media Acquisition Framework
- IPv6

METADATA
- MISB ST 0601 – UAS Datalink Metadata
- MISB ST 0102 – Security Metadata
- MISB ST 1107 – Geopositioning Metadata
- MISB EG 0104 – Predator Metadata
- Predator ESD
- MISB ST 0603/0604 – Synchronous Metadata
- MISB ST 0902 – Minimum Metadata Set
- MISB ST 1204 – Core Identifier
- MISB ST 0806 – RVT Data
- MISB ST 0602 – Annotation Metadata
- MISB ST 0808 – Ancillary Text Metadata
- MISB ST 0903 – VMTI Data
- MISB ST 1202 – Generalized Transformation
- MISB ST 1010 – Std Dev Corr Coef Matrix
- MISB EG 0801 – Photogrammetry Metadata
- MISB RP 0608 – Motion Imagery Identifier

IMAGE FORMATS
- NITF (MIL-STD-2500C)
- NSIF (STANAG 4545)
- Bitmap
- JPEG
- JPEG 2000
- PNG
- TIFF
- RGB / Monochrome / YUV

VIDEO DISPLAY
- DirectX
- OpenGL
- Video Overlays

PROGRAMMING LANGUAGES
- C++
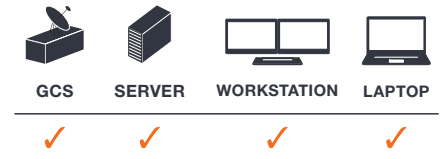- Java via the JNI
- C# via the CLI

ARCHITECTURES
- Windows – x86/x64 – Visual Studio
- Linux – x86/x64 – GCC
- ARM – AArch64 – GCC

DEVELOPER RESOURCES
- Extensive API Documentation
- Technical Support and Support Case Options

SAMPLE APPLICATIONS – FULL SOURCE
- Media Client / Player
- Media Server
- Media Transcoding
- Media Streamer

GCS	SERVER	WORKSTATION	LAPTOP
✓	✓	✓	✓

Tungsten SDK
- The de-facto ISR industry standard for motion imagery interoperability
- MISB / STANAG 4609 compliance
- ITAR-free*
- Available with *get-you-started* technical support and support cases

*Software is classified as EAR99.