Sentric2
Advanced High-definition Video Recording System Software

Features

- Powerful application code to implement video recording and network distribution systems

- Support for JPEG2000 and MPEG4/H.264 acquisition and compression modules

- Records multiple channels of SD/HD video

- Records multiple channels of audio

- Support for embedded metadata

- Control locally or over a network using a GUI or XML-RPC application-programming interface

- Network streaming of video and audio using:
    - DEF STAN 00-82
    - UDP
    - RTP

- Built-in self-test and monitoring

- Supports rotating, solid-state and network-attached storage with optional encryption

Overview

The Sentric2 application software is the powerhouse at the heart of our range of Video Recording & Distribution (VRD) systems.

Sentric2 provides the means for VRD systems to record, playback and distribute multiple channels of standard definition and high-definition video and audio over standard networks.

Sentric2 provides advanced functionality including support for continuous (time, location) and event-based metadata and continuous recording where older material is automatically erased.

Sentric2-based VRD systems can be constructed to support high-definition video applications in ground, naval and airborne platforms that are fully network integrated both in terms of remote control and video/audio streaming.

Typical applications include the recording and sharing of video received from sensors and the recording of operator screens for later de-brief, training or forensic purposes.

Video Recording

Sentric2 fully supports the recording of multiple channels of high-definition video and audio with integrated support for employing Curtiss-Wright Controls Embedded Computing's video acquisition and compression modules: Orion, PMC-281 and XMC-280. These modules create solutions capable of real-time recording and distribution of four or more full SD/HD video sources from RGB, DVI and PAL/NTSC video sources.

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Email / sales@cwcembedded.com

Above & Beyond

CURTISS WRIGHT Controls
Embedded Computing
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A typical VRD system has four channels of high-definition DVI and RGB recording at either full frame-rate or of a user-defined number of frames per second and some configurations permit simultaneous playback of data during recording.

Event markers can be inserted into recordings and used for finding particular segments of the recording on playback and the architecture supports searching through recordings using the embedded metadata.

Sentric2 supports recording to solid-state, rotating and network-attached storage with optional encryption and use of RAID.

Audio Recording

For applications where video is only half the story, Sentric2 supports the recording and playback of audio – multiple channels are recorded and on playback synchronized to the video regardless of the frame-rate at which the video was recorded.

Playback

Sentric2-based systems can use applications for playback or employ the hardware-accelerated decompression provided by Curtiss-Wright's compression modules.

MPEG4/H.264 recorded video can be replayed using standard players such as mplayer and VLC. JPEG2000 recordings are replayed using efficient software decompression integrated into Sentric2.

Video can be replayed at various speeds, forward and backward. Navigation of recordings is facilitated by the ability to jump to specific times and the architecture supports navigating by metadata values.

Network Video Distribution

Sentric2 provides powerful network distribution functionality:

- Record video received from a network with optional compression.
- Stream video across network to remote players and other Sentric2-based systems.

Streaming of video, whether recorded or acquired and streamed in real-time, is achieved using UDP, RTP or DEF STAN 00-82 networking protocols on Ethernet.

The video distribution capabilities of Sentric2 allow video captured from a camera to be viewed by multiple clients or recorded by another remote Sentric2 elsewhere on the network.

Controlling Sentric2

Sentric2 operation is configured and controlled either by configuration files or via its graphical user interface or network API.

The graphical user interface is provided for local and network-attached users and settings can be captured into a configuration file.

The XML-RPC network programming interface allows user applications on networked systems to control the Sentric2-based system.

Example Applications

Sentric2-based VRD systems support the entire range of environmental levels in which Curtiss-Wright products are typically deployed from benign laboratory-type environments, through naval and wide-body jet applications to the harshest vetronics and fast-jet platforms.

Typical applications for which Sentric2 provides support include the following:

1. Screen recording: Recording the contents of mission displays for later playback and analysis for debrief, forensic or training purposes.

2. Multiple audio inputs provide support for recording radio chatter and local voice – or audio sensor – together with the video.

3. Sensor recording and distribution: video captured from cameras or IR sensors is recorded and distributed to multiple screens so that several operators can see the camera inputs in real-time.
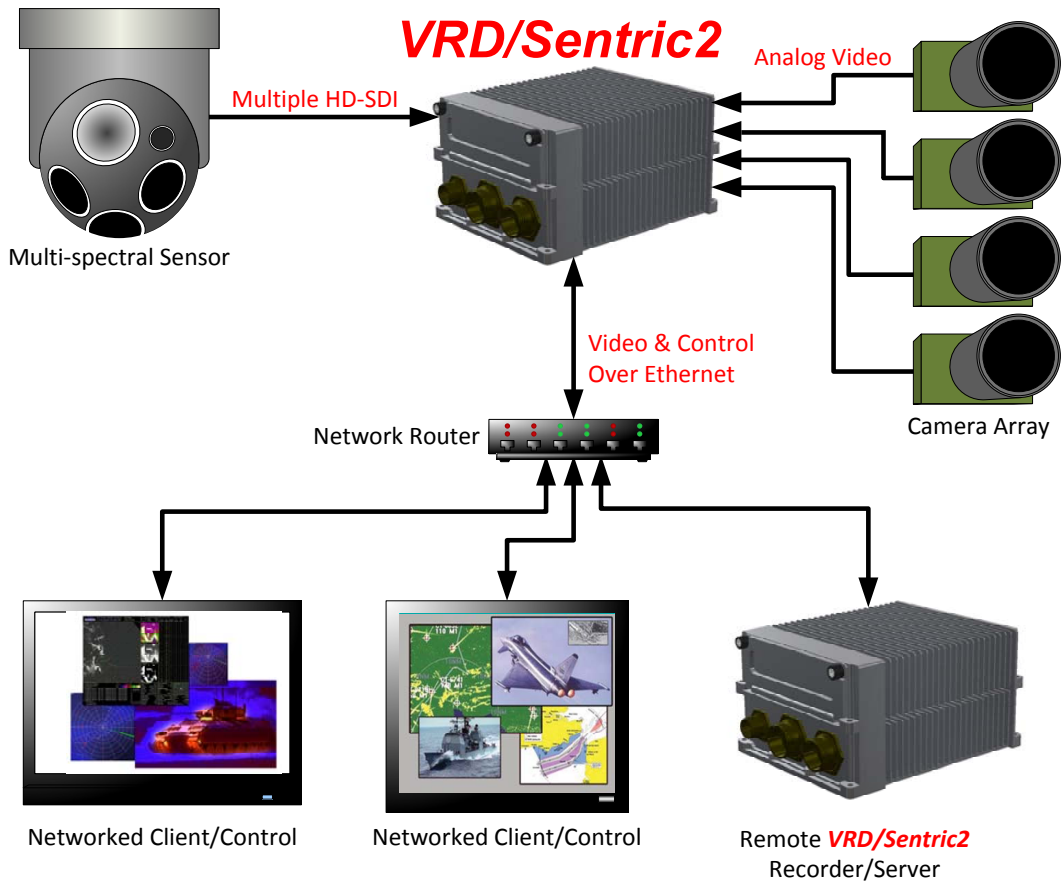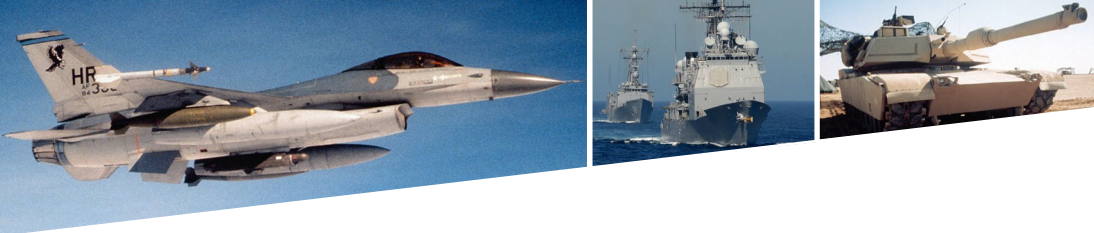
Specifications

- Support for PMC-281 and XMC-280 compression cards on Linux Intel-based processing platforms.

- Records multiple channels of audio and video – precise number of each depends on the specification of processing platform.

- Playback of recorded video with audio.

- Playback controls for stop, pause, play, fast-forward and reverse.

- Compresses and decompresses network video using the XMC-280 in co-processor mode.

- Network video streaming support for:
  - DEF STAN 00-82
  - UDP video to other Sentric2-based systems

- Software playback:
  - JPEG2000: integrated Sentric2 software viewer for stored video or video received over UDP from another Sentric2-based system.
  - MPEG4/H.264: play using standard players such as mplayer, smplayer or VLC of either stored MKV-format files or video received over RTP from another Sentric2-based system.

- Basic configuration files.

Opportunities for future enhancement

The architecture of Sentric2 has been designed to support advanced features such as:

- Recording and distribution of continuous metadata such as embedded time codes and GPS location within the audio/video stream.

- Enhanced support for event markers during recording and replay navigation.

- Navigation of recorded data by searching metadata.

- Replay of any video stream with any audio streams.

- Time-shift record and playback to view a video stream still being recorded.

- Uncompressed video using Curtiss-Wright's XMC-270 frame grabber.

- JPEG2000 streaming over RTP between Sentric2-based systems.

- Advanced built-in self-test and monitoring.

- Automatic time-stamping with time displayed in Sentric2 GUI.

- Recording GigE Vision video from Ethernet.

- Rolling record – sometimes called circular buffering – to provide indefinite recording with oldest data overwritten by new when the storage is full.

- Enhanced disk management including hot-swap and buffering video to network-attached storage.

- MIL-JSP441-compliant file naming.

- Enhanced configuration files.

- Flash/ROM-resident operation.

VRD/Sentric2

Multiple HD-SDI

Analog Video

Multi-spectral Sensor

Video & Control
Over Ethernet

Camera Array

Network Router

Networked Client/Control

Networked Client/Control

Remote *VRD/Sentric2*
Recorder/Server

Warranty

This product has a one year warranty.

Contact Information

To find your appropriate sales representative:

Website: www.cwcembedded.com/sales

Email: sales@cwcembedded.com

Technical Support

For technical support:

Website: www.cwcembedded.com/support

Email: support1@cwcembedded.com

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