IVC APPLICATION NOTE:

Pipeline Monitoring

IVC video systems are used by several large natural gas producers to monitor a variety of facilities in their pipeline operations including pump stations, delivery terminals and receiving terminals for an array of pre-refined crude and refined hydrocarbon products.

Typically, one to four cameras are deployed at each of their various facilities. The facilities, many of which are in remote locations, are monitored centrally and from various alternate sites. The IVC Relay server and IP addressable cameras provide an ideal architecture for these requirements.

Typical of the challenges facing IVC as it developed the systems for these companies, was the requirement to use existing SCADA connectivity to their remote sites. One application had existing Gilat VSAT satellite hub provided 128kbs out and 33.6 kbs in, and this was to be shared with the SCADA traffic. The satellite link was configured to create a TCP/IP channel, which is subordinate to the SCADA channel and this was used for the IVC video. Because limited bandwidth was available, the IVC system was configured to limit bandwidth consumption to the absolute minimum necessary to achieve the monitoring objectives.

The system was configured for the cameras to send images to the Relay Server only when a viewer requests them, or when an event occurs. IVC PTZ-3130 cameras were deployed at the remote locations, along with motion detectors targeting gates and other sensitive areas. The motion detectors are connected to alarm inputs on the cameras (up to three sensors per camera). Each motion detector is associated with a preset camera position. When motion is detected, the camera points to the position where the alarm occurs and saves recorded video locally in the PTZ-3130 camera and a single image is sent over the satellite link to the Relay Server, and on to the operator responsible for monitoring that location. Upon viewing the snapshot, the operator can request additional snaps or the stored video, as desired.

IVC worked closely with the company to customize its Relay Server software to meet the specific requirements of this application. The end result is a remote monitoring system that uses an absolute minimum of the expensive satellite bandwidth, and is able to operate on the existing narrow connectivity that was originally scaled for SCADA traffic only.