



IPITEK Product News

IPITEK IMTRAN Systems

Issue 4

Supporting Security and Surveillance Operations with IPITEK HBR-2502 Digital Transport



As the Department of Homeland Security ramps up efforts to improve all types of security in the United States, there are many programs being developed which are designed to expand today's security and surveillance systems. The opportunities include a wide range of voice, data, video and data processing plus wide area transport. To implement these planned requirements, equipment is required to support all types of networking, from simple voice circuits to complex data and video networks.

In the past, surveillance operations were mostly local and did not require transport over long distances. Airport security systems have been largely local CCTV systems and have generally terminated in a local security office or utilized local storage on tape. The new security plans require sophisticated networks, which simultaneously provide local monitoring as well as immediate access to signals in offices, which cover large geographical areas. Besides service for current analog video, the new networks will also require services for high definition real time video as well as compressed video in multiple formats, such as MPEG-2/MPEG-4, JPEG-2000 and signals encapsulated into DVB-ASI or even SMPTE-259M and SMPTE-292M. Existing CCTV networks will evolve from local, closed circuit applications to long-haul, Wide Area Network (WAN) infrastructure for

sharing and interconnecting to multiple government security agencies which may be located all over the US.

In addition to the video capability, networks will require carriage of services such as telephony and data in multiple formats. These formats range from single RS-232 data to 10/100/1000 Ethernet, IP and over packet data.

To accomplish these tasks, networks must not only be able to carry this wide variety of signals but to provide full transport protection and high quality of services.

IPITEK's broad range of digital transport offers a wide variety of solutions for the complex requirements being formulated. Many IPITEK products have served the security and surveillance market for years. An with the wide range of signal types which the products can carry, they are already able to fill many of the requirements of the newer networks being planned.

Of course, there are still many applications which require smaller local systems. These systems will be used to accumulate data and provide input to larger regional systems. There are also new uses for local systems being developed.

IPITEK's complete family of digital transport products can provide tailored solutions to meet any of these requirements.



HBR-2502 Transport

For major security and surveillance applications, the transport platform must be optimized and multi-service. For optimum performance, the system must interface to SONET/SDH systems and provide an optical platform capable of Coarse or Dense Wave Division Multiplex (CWDM or DWDM) operation.

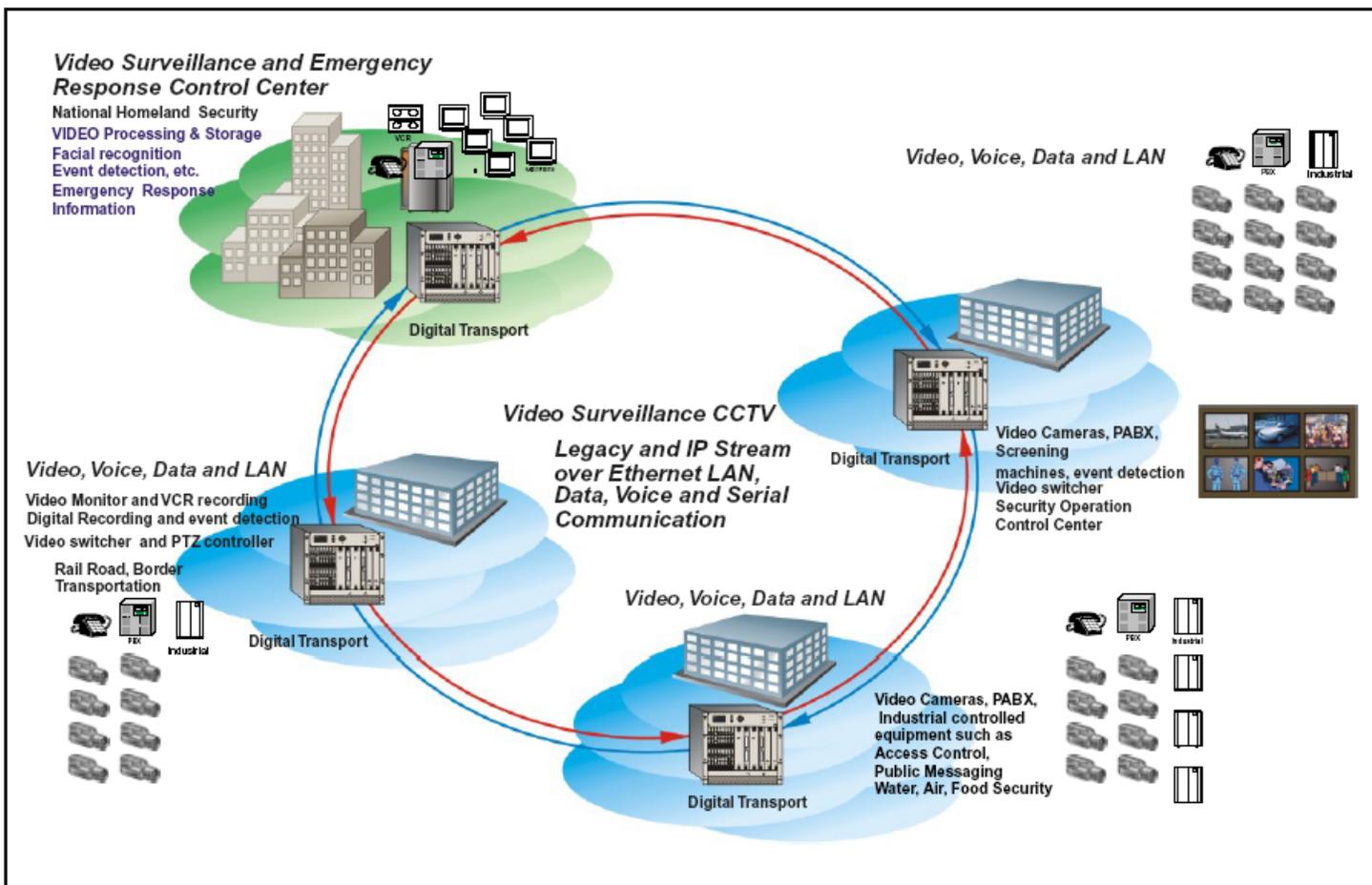
To meet these requirements, the

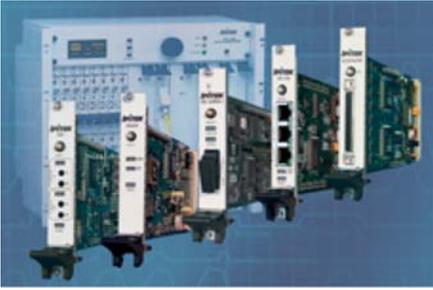
IPITEK HBR-2502 Transport Platform provides multi-service transport for video surveillance, data services and telephony at OC-48c/STM-16c over a SONET/SDH network. CWDM/DWDM metro core system. The system provides flexible granularity for efficient bandwidth. With capability to carry standard HDTV video, a variety of data services including multiple interfaces, the HBR-2502 can easily function as a full performance platform for immediate application in the "new" security era.

The HBR-2502 also provides users with the latest transport technology, the new HBR-VCX engine. The HBR-VCX provides a number of functions. The unit performs all multiplexing and demultiplexing and cross connect functions for the HBR system. However, the VCX expands the capability of the system by adding a number of "Next-Gen" SONET/SDH technology.

The VCX engine utilizes a VLSI assignable parallel buss cross-connect between the service modules and the SONET/SDH link framers with 27 Mb/s granularity for each service slot. It does the add, drop and pass signal mux and demux functions while framing the data into an OC-48c/STM-16c payload. It also does the rapid protection switching and provides DCC comm. between each node. Thus the system bandwidth is efficiently managed to eliminate wasted bits over the optical links.

These many features in the HBR-2502 system allow it to be an efficient transport in a system such as the one in the drawing below. Utilizing the HBR-2502, the system can provide a full performance ring, either separately or over SONET/SDH, to carry voice, video and multiple types of data needed to support the goals of homeland security.





The HBR-2502 Transport System provides a wide array of interfaces suitable for all types of future networks which are being planned by the Department of Homeland Security. While the main emphasis has been on airport security, there are many other vital applications. With its interfaces for video and multiple types of data, combined with SONET/SDH or DWDM networks, HBR-2502 provides the reliable data path needed to assure successful operations. The same elements, secure and reliable video, voice and data traffic are required for these newer security networks.



Security and traffic control along the nation's thousands of miles of highways require the use of many types of services. While many highways already use video cameras to survey traffic movement, the information is generally local and not provided in

real time to multiple locations or agencies. The number of cameras will increase substantially as surveillance extends from the central cities to the wide areas of interconnecting highways. Traffic information signs with information flowing to local areas from centralized operations centers will add to the requirements for wide area networks. Traffic control will become more vital to assure the public safety. All of this array of data requires reliable fiber transport to assure success.

Expanding networks also include both local transportation systems as well as the continental train and bus systems which operate throughout the country.



The same data elements are present in these forms of transport and will require wide dissemination to assure local and national coordination.

At the same time, the vast commerce of the country will be undergoing changes. Identification of cargo and secure control require the addition of new devices which read coded

information to identify the contents of cargo containers and follow the containers as they are moved by rail or truck throughout the country.



HBR-2502 combines open architecture transmission with high performance optical fiber to provide networks capable of simultaneously transporting Video Networks which can encompass large geographical areas and provide services for standard video, high definition video, compressed video in multiple formats, together with multiple types of data in an efficient network with great flexibility.



Additional Information about any of the data modules is found on the IPITEK web site or is available from IPITEK.

For additional product or ordering information related to the featured products or any of IPITEK's family of transmission products, visit our web site www.ipitek.com or send a message to sales@ipitek.com.



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