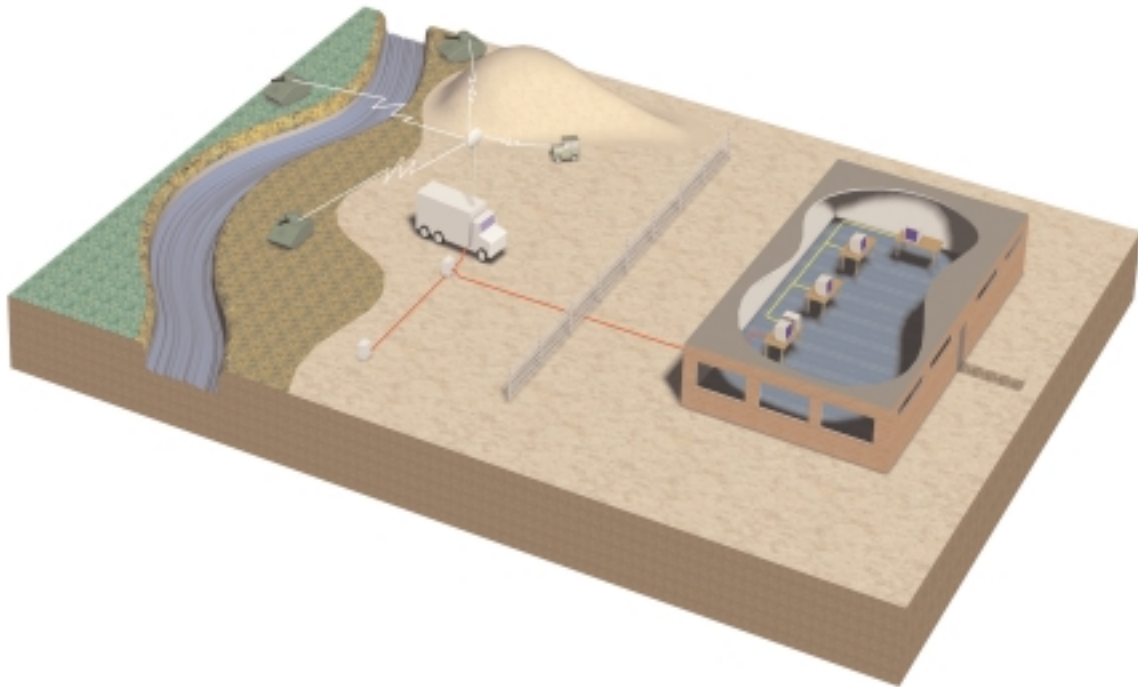


## Application Note

## Video and Telemetry Data System (VTDS)



The Video and Telemetry Data System (VTDS) functions as the data link system between test “players” (vehicles, personnel, weapons systems) on the test range and test engineers/analysts in the range control center.

The “players” under test are instrumented and transmit encrypted and compressed real-time data via an RF link to the Video and Telemetry Recording System (VTRS). The VTRS performs decryption, time tagging, archival and data distribution - all in real-time. Archival is performed using multiple high speed Ultra SCSI tape drives configured such that unlimited, uninterrupted data storage is possible with minimal operator intervention. Data distribution is accomplished via Ethernet or ATM networks.

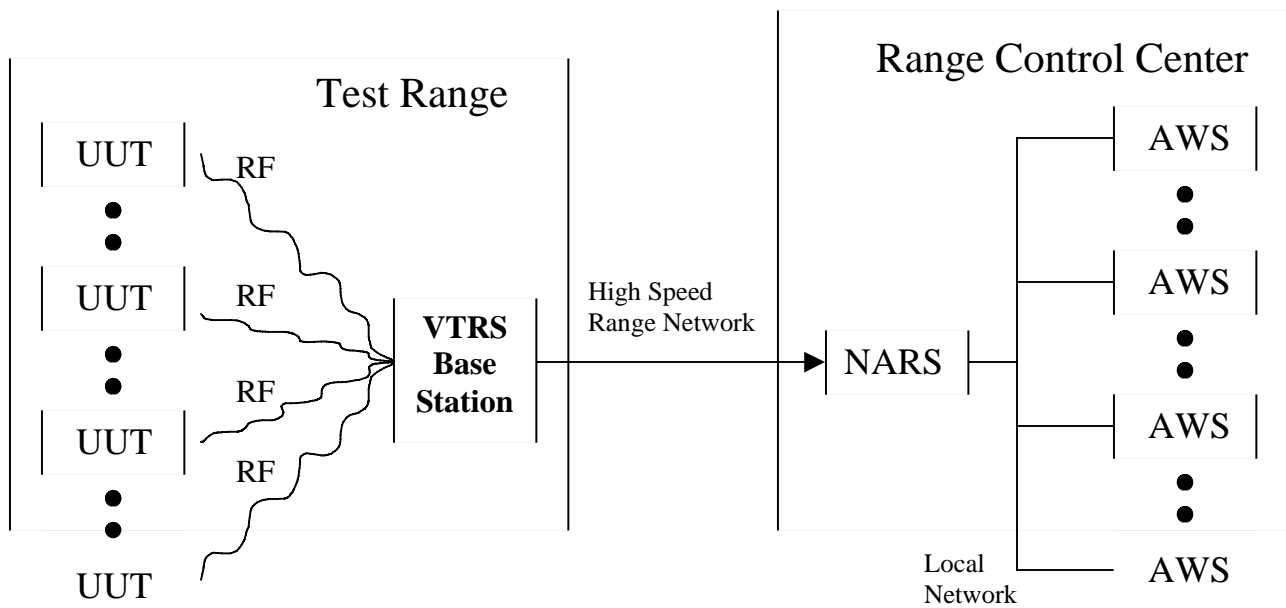
This VTDS configuration can simultaneously support up to 20 PCM telemetry streams, 80 audio channels and 80 video sources. All audio and video data is archived and distributed in it's original compressed format (mu-law for audio and JPEG for video) to maximize system throughput.

***Integrated system acquires, records and distributes multi-source real-time data in test range/OpEval application***

*· Fully integrated system supports archival and display of test range data in mobile truck base station*

*· Data distributed from truck to range control center via ATM network accessed from various points on the range*

*· Analyst workstations provide multiple users access to data during test as well as full replay/review capability*



The relationships between the integrated sub-components of the system are shown in the block diagram above and described below.

- Unit Under Test (UUT)
- Video and Telemetry Recording System (VTRS) base station
- Network Archive and Retrieval System (NARS)
- Analyst Workstation System (AWS)

Each of the sub-components listed above are fully integrated AP Labs sub-systems, consisting of COTS hardware and AP Labs developed software products. The exception is the set of UUTs, which are customer-furnished equipment. These consist of various types of military vehicles and mobile weapons systems that have been instrumented to provide video, audio and telemetry data.

The VTRS base station is installed in a 24-foot Tempest shelter box mounted on a Freightliner truck. The base station is integrated with RF receivers and an externally mounted antenna, which allow the VTRS to receive data from up to 20 UUT's simultaneously.

During a test, the truck is positioned on the test range such that there is a good line of sight to each of the UUT's and close access to one of the junction boxes for the range ATM network. This allows the base station to distribute data over the range network back to the range control center, which is located several kilometers away.

Data received in the range control center over the network is archived to a high capacity RAID system, which is part of the NARS. This provides a redundant capability to the tape archive performed by the VTRS base station. The NARS also acts as a data server for clients on the local network in the range control center.

AP Labs has also developed the client software to run on the AWS systems, which in this case are high performance dual Pentium III PC's. The primary function of the AWS is to decompress, display and provide data analysis capability for real-time data received during a test. Each AWS has independent control over the content and rate of the data that it receives, allowing different analysts to focus on different portions of the test data. The software has been developed in JAVA so that the application is platform-independent.

After the test run is completed, data can be replayed from any of the archived data sources. This includes the tape archive in the VTRS base station, the RAID archive in the NARS, and even from the local archive in the AWS systems. This replay capability allows the users to review the test (or part of the test) as if the data were arriving in real-time.