

## VOCORD Phobos

### Software System

VOCORD Phobos system is designed for around-the-clock surveillance and recording audio and video data and telemetry. Due to its unique design, the system is very efficient and meets the highest standards of video image quality and pinpoint accuracy of video and audio synchronization. Full-service network support allows one to create scalable distributed systems with centralized security and control policy. The above factors make VOCORD Phobos an ideal tool for creation of flexible and trusted security systems.

### Features

This software supports video compression/decompression functions due to VOCORD boards with Wavelet video processing hardware support. The program package also supports the whole range of features and processing functions regarding input audio and telemetry. VOCORD Phobos system may create a developed working area for operator of the monitoring center.

The additional hardware timestamps ensure the highest accuracy of audio and video streams synchronization. VOCORD Phobos and VOCORD platforms ensure error-free performance in triplex mode with simultaneous recording, monitoring (i.e. real-time channel playback), and archive records playback.



### Synchronous Recording

There are two different methods of synchronous media recording: the first method uses one and the same card for audio and video digitization and processing, while the second method uses different specialized cards for audio and video digitization and processing.

The second method is preferable for obtaining high-fidelity audio/video recording because during A/V streams digitization at one card the high-frequency video signal induces interference in audio line channel. Besides, in such cases audio digitization is usually done using an embedded video codec which is inferior to a specialized audio codec.

Thus, the specialized video and audio cards are preferable for obtaining professional hi-fidelity audio/video recording. However, with this approach there appears a synchronization problem for streams coming from different cards. As OS Windows is not a real-time system, the mistiming of video and audio streams may reach 200 ms and more depending on the system load and drivers implementation properties.

To avoid this problem VOCORD Phobos recording systems use timestamps added to audio and video streams. Hardwarily added timestamps prevent OS latency from influencing the accuracy of clocking.

### Playback

Video and audio streams are played back independently, therefore they are not synchronous even if the original recording is synchronous. This constitutes the major problem of synchronous playback. The problem becomes evident during long (more than 15 min) fragments playback when mistiming reaches several seconds.

To resolve the problem VOCORD Phobos uses Microsoft advanced multimedia processing solutions. VOCORD Phobos uses DirectShow technology for records playback. This feature ensures hi-fi accuracy of synchronization. DirectShow also has a number of incontestable advantages. DirectShow uses DirectSound and DirectDraw to ensure efficient use of all hardware capabilities of computer multimedia subsystem.

Besides VOCORD Phobos transport subsystem allows remote playback of synchronous record in a network with undercapacity. In case of insufficient bandwidth the system increases audio traffic priority and adjusts the videostream to an available transmission band. Adjustment is achieved through uniform frame transmission.

### User Channels

VOCORD Phobos system provides synchronous recording and playback of several video and several audio streams, which are called user channels. The above capability allows one to accomplish the most difficult tasks.

# Advanced Facilities of Video Processing

Motion detector supports 414 detection zones. Detector's settings allow one to avoid misoperations caused by noise, such as snow, rain, illumination changes etc.

Quality Box function detects image areas not subject to registration within camera shooting zone. This allows one to reduce the volume of stored video data. Such feature may be useful in case when a frame includes a part of static object, for example, part of a house roof.

VOCORD Effect module is a hardware-software environment designed for processing of video received or recorded with different illumination, under different weather conditions, or in other circumstances when videodata need to be corrected for their further analysis, visual perception and obtaining the necessary information.

## Network Support

System's client/server architecture allows one to create large distributed complexes with almost unlimited total capacity. Several recording stations are included into a uniform system via TCP/IP network with a uniform administration and common distributed records archive. Disconnection of any station does not affect the workability of other stations as well as the whole system. Full-function control over the system is done via remote access. However, connection of a new remote client in a browsing mode (while viewing confidence channels or archive records) would increase system load by as little as 3-5%. Thus, the number of sessions is actually limited only by a network bandwidth. The system may be equipped with a built-in web-server providing full-function system access and standard web-browser control.

## Access Security

The system includes a flexible Access Security system allowing every operator to choose the required type of interface and customize functions. Access Security provided for each record constitutes an important feature.

## Records Archive

VOCORD Phobos is notable for its powerful system of archive records control. The system has been designed for work with archives containing millions of records. A handy search and sorting tool allows quick access to records, as well as browsing, deleting, replication and export of records to predefined format files. The unique schedule tool may perform the above functions automatically without an operator's permanent assistance. So, the system may operate in an unattended mode. VOCORD Phobos supports records replication to removable media (magnet-optical disks, streamers, DVD etc.) or to remote archiving servers via TCP/IP network.