

# Video Security Analytics – The Next Generation

*How to Achieve Total Security Control*

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# 1. Video security analytics the next generation

## The idea in brief

As video security systems have grown beyond a couple of cameras and a recorder into centrally-monitored, nation-wide networks often covering hundreds or even thousands of locations and even more individual devices, both the degree and quality of security they provide have grown with them.

These networked systems deliver unsurpassed security with better images, more accessible data, integration to existing networks, and databases that deliver detailed information with pinpoint accuracy when an event occurs. Systems are often built across multiple hardware platforms, and maintained at different levels of proficiency. While their advantages are considerable, they continue to challenge their operators.

The original problem has remained constant: How to verify and control every device in the network, ensure all devices are working as they should, and that critical data will be available when the time comes?

The answer comes in a new central control system specifically developed for the diagnostic management of large security systems, taking advantage of the way the devices are designed to interface, and responding to the demands of users whose responsibility it is to deliver the security information in a reliable and timely manner.

Digital Security Diagnostics (DSD)™ patented technology brings a level of automation to the verification & control of these systems that has been missing until now. Three years in development and already up and running in a number of large systems, DSD™ brings that essential, but previously missing element of performance analysis and control to the operators of large systems, ensures that all components are running correctly, and acts as a “system operator”.

This is video security the way it was meant to be.

### **Example of how central diagnostics can help**

A national retailer acquires a competitor and adds another 800 locations to his portfolio. The total retail chain grows to over 2500 locations surpassing the security manager's ability to track the operation of multitude of security systems. Surveillance equipment is in place, although different brands of gear are used. Both systems are relied on by their management for their security overview.

But operations are completely manual, relying on spot checks to verify that recordings are being made, that image quality is adequate, and that communication systems are delivering.

Manually monitoring a system of this scale is tedious, if not impossible, work which inevitably leads to errors. In no situation can operators be expected to recognize if a camera image has changed, either by equipment failure or by intent. Operators won't recognize that a DVR is no longer recording at full spec. Logging is a monumental task. And worse yet is the activity of manually searching for data regarding an event.

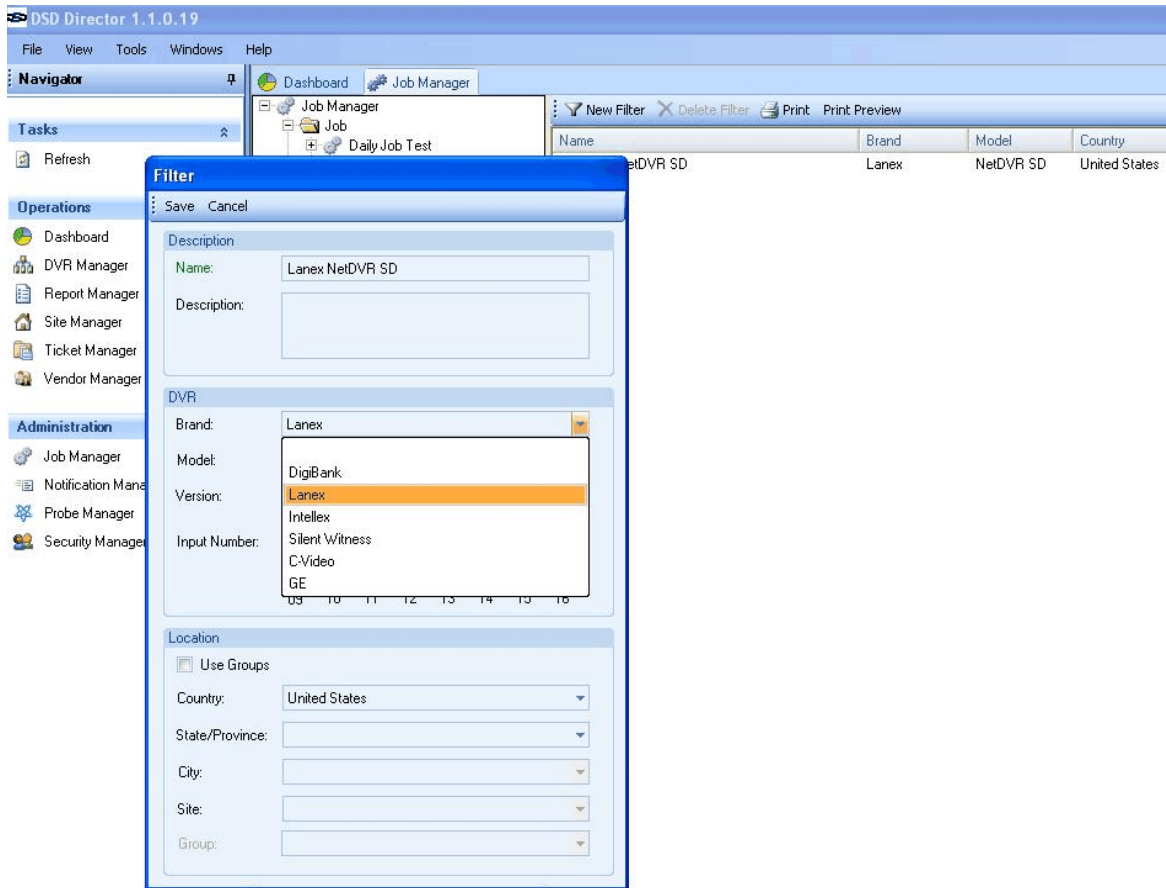
A perfect example of a system that has outgrown its structure.

What if there existed an application to efficiently perform these important tasks?

Imagine a centralized control system that verifies the health of your security network on a full time basis. That can uncover information that will help you make the right choices for continued protection. With the ability to alert you of failures with speed and precision to help you maintain security coverage.

These concerns are easily resolved with DSD™. Important information is continuously delivered by DSD™ with accuracy through easy to interpret reports and notifications via a best in class software monitoring solution.

DSD™ is an automated attendant or "genie" software that automatically performs verifications of your video security systems and intelligently produces valuable information for the management of asset protection.



## 2. Why centralize video security management

With DSD™, it's all about control.

DSD™ patented technology gives you complete control over all the information related to video system performance by analyzing, comparing and notifying of video based failures. Security and loss prevention departments are given new insight on the level of protection by providing thorough reports.

DSD™ performs direct monitoring through custom interfaces and stores all system activities for review. Under the constant direction of DSD™, every location and each component in the system is supervised and monitored. Each is fully

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integrated into the larger system. And a desktop application provides complete access to each node.

DSD™ adds centralized control and management functions under a robust diagnostic application. This guarantees higher operational efficiencies by providing a powerful “global view” of your video equipment.

This greatly reduces waste by using vendor support only when needed vs. using expensive service contracts and it also lowers the liability associated with the inability to produce video evidence.

DSD™ provides a wealth of accurate information and data resources to aid in reducing operational cost. The system provides an unprecedented level of transparency to your security management team delivered through a rich graphic interface. Information on system health, service calls, type of failure, location of failure, image quality etc.. is always available.

While you have full access to the system from a Windows desktop, specialized diagnostics are being performed regularly, making sure every part of the entire system is doing what it's supposed to do.

DSD™ is a system of control automation that delivers a solid overview to the operator and manages the details of system operation and maintenance.

In short, this is what DSD™ adds to your security system:

- Increased security performance across the organization
- Superior evidence gathering
- Timely response to failures
- Unified management of multi-brand video systems
- Lower insurance premiums
- Data for more precise assignment of human resources as required

### **3. The idea in practice**

What DSD™ centralized components add:

- A level of automation that lets security personnel concentrate on security. Automation that ensures security data will be available when it's needed.

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- Automated real-time monitoring of DVRs, NVRs, IP video and components. Under DSD™ control, every camera, recorder and network device is polled and verified for nominal operation, around the clock.
- Integration with IT network infrastructures  
Use existing LAN and WAN configurations to monitor and control the entire system, locally or globally, as configured.
- Automated Logging and problem reporting.  
Verifiable records of the system's operating correctly at any time, and instant notification of hardware, software or network problems.
- Automated Image Quality Evaluation  
Powerful image-analysis software to notify and correct image deficiencies.
- Camera tamper detection  
Regular comparison to memorized data to ensure cameras operate as programmed.
- Monitor DVR Catalog Size  
Control database entries, keep what you need online, move the rest to archives.
- Report performance trends  
Helps spot problems before they happen, plan future expansion based on real data.
- POS stream analysis  
Integrate security data with POS data for accurate identification, analysis and future system expansion planning.
- Watchdog to monitor both component and system health  
Full confidence in all aspects of system operation.

- DVR interruption report  
Detailed reports of failure to operate at full spec, often in advance of failure.

### **4. DSD™ components of a centralized management system**

DSD™ is comprised of these software components:

#### **The Director**

The Director is used to configure the DSD™ system and manage its daily operations. It offers a sophisticated user interface to easily manage DSD™'s complex operations.

#### **The Probe**

The Probes communicate with Digital Video Recorders (DVRs) and collect data about their operating status. They evaluate the quality of images captured by the DVR's surveillance cameras. Multiple Probes operate as a group, accelerating the retrieval of data from all DVRs on the system.

#### **The Agent**

The Agent forwards the Director's requests for information to the Probe(s). It retrieves, processes, and stores the data for presentation by the Director.

#### **The Plug-In**

A Probe communicates with a DVR using a plug-In. Each brand of DVR requires a unique plug-In. A Probe is simply equipped with several plug-ins if it is required to communicate with several brands of DVR.

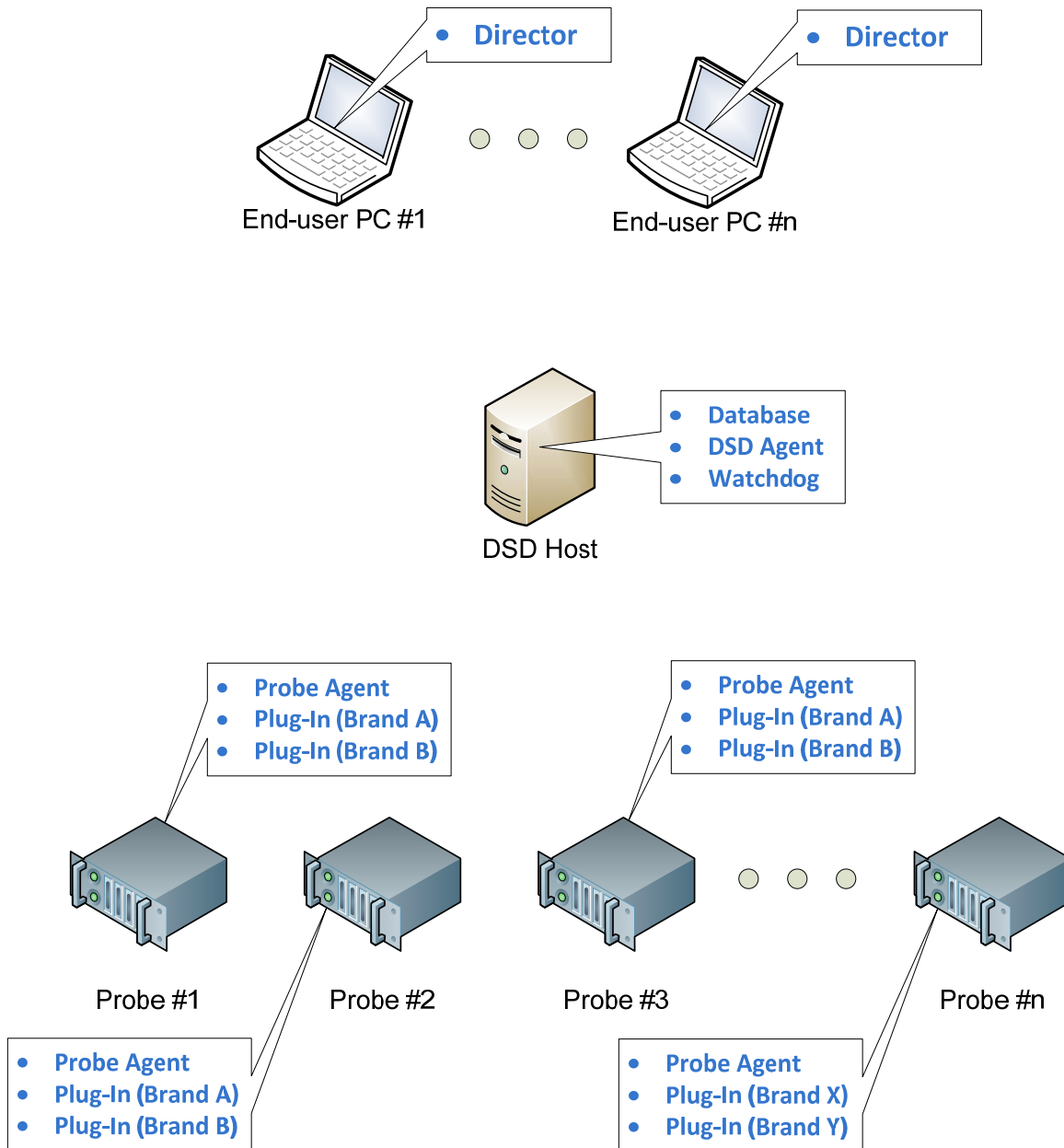
#### **The Database (Microsoft SQL Server)**

The Database stores all data collected by Probes and is managed by the Director.

#### **The Watchdog**

The Watchdog monitors the operation of the Dispatcher, Probe, and Database. In the event of a problem, the Watchdog will notify all administrators via email.

## DSD™ components of a centralized management system



## **5. The Functions of the Director**

The Director provides oversight of essential functions. These are conveniently grouped so access is quick and intuitive.

### **Site Manager**

Maintain all data related to each site including its surveillance equipment, employees, and service personnel.

### **DVR Manager**

View the DVR inventory and quickly locate a specific DVR by name, brand, or model.

### **Ticket Manager**

Review and resolve all trouble-tickets reported by DSD™.

### **Report Manager**

Analyze the status and performance of all DVRs and cameras.

### **Job Manager**

Specify the data to be collected and how often it should happen.

### **Notification Manager**

Define who should be automatically notified when certain events occur.

### **Probe Manager**

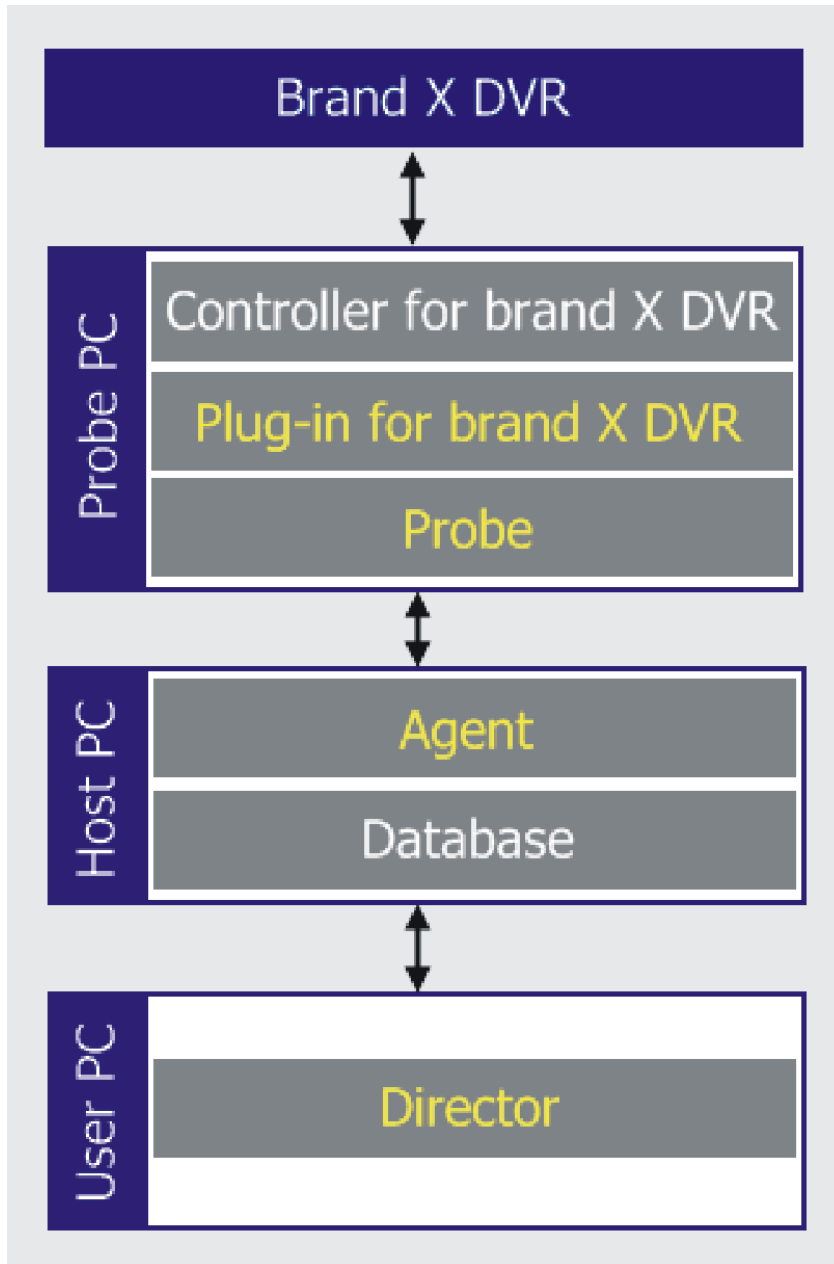
Manage and monitor all machines (Probes) responsible for collecting data.

### **Security Manager**

Share DSD™ data with employees by providing controlled access to the Director.

### **Vendor Manager**

Manage all service vendors and their representatives.



## **6. Applications**

### **Case1: HQ gets complete control of its Loss Prevention network dispersed around the world**

**HQ finally has complete control of our Loss Prevention network, which is dispersed round the world**

***Huge Investment of surveillance equipment unmanageable without DSD™***

We had a real problem in getting any significant control over our video surveillance assets on our network. Over the years our company deployed thousands of DVRs, and tens of thousands of cameras to improve our security control.

Due to our exponential growth we evolved into a situation where we were trying to cope with a huge and unmanageable security infrastructure. We were never able to maintain an up to date data base of our security assets out in the field, what was working, and what was in need of repair.

Our preventive maintenance was virtually nil, which ultimately led to our security assets not providing us the data when we need it the most far too often. This situation left our security processes and data in disarray.

In actual fact DSD™ became our savior. It created a complete inventory of our DVRs and cameras, in addition to identifying all of our defective equipment. DSD™ gave us the information we needed to manage our assets intelligently and ensured our security processes with thorough coverage throughout our network. If your company has a large scale video surveillance system, what you need is DSD™. I highly recommend it.

### **Case 2: Automated Diagnostics reduce security headcount**

**We now have an automated diagnostic tool that reduces security headcount**

***Bank centralizes multi-vendor surveillance infrastructure***

A bank with over 1,500 branches had acquired a mixed vendor DVR monitoring infrastructure comprised of equipment from several DVR manufacturers.

The bank ran multiple security monitoring systems in different areas of the country. The DSD™ software integrated the different systems so they could be managed from one central security department located at headquarters.

The integrated DSD™ system not only reduced headcount, but it also allowed the bank to upgrade and expand its surveillance infrastructure as they required.

The bank continued to renew their equipment by integrating the latest DVR technologies into their network knowing they would be compatible with the existing centralized monitoring system.

### **Case 3: Retailers reduces theft with centralized security management system**

**The system made a real difference in how much inventory we were losing from theft**

*Is your security system an asset or a liability?*

I don't understand how anyone can manage a large scale video surveillance system without DSD™ software. Do you know when a DVR has failed? Are all of your cameras recording usable images?

Do you know how many DVRs have been serviced in the past year? How many cameras? DSD™ provided me the answers to these questions and more. How about you, are you in the loop?

To stay competitive as a retailer you have to consistently find ways to improve processes reduce overhead and cut expenses. I needed to find a solution to cut my shrinkage, period.

The DSD™ software actually empowered my loss prevention department to take control of our surveillance systems in the field and actually yield significantly better loss prevention results.

DSD™ provided my personnel to better and proactively manage problems before they escalated into liabilities. DSD™ made a real difference in how much inventory we were losing to theft. If you don't have DSD™, your security system will never reach its real potential.

**Case 4: Bank boosts its level of security by managing surveillance from HQ**

**No other system enables us to protect our assets, employees and our customers like DSD™**

***Having peace of mind knowing your surveillance systems are up and running***

In my experience a video surveillance system can give you a false sense of security. You count on it to provide crucial evidence, but it can, and often does, fail you when you need it most.

If your surveillance network extends to thousands of banks or stores, in all likelihood many of your security assets within that network have several failed cameras and DVRs.

Why do I highly recommend DSD™?

DSD™ empowers you to take total control of your surveillance network from HQ when you need it most. Having the information and awareness to act upon something when it needs to be repaired is critical for any surveillance system to yield positive results.

DSD™ monitors all of my DVRs, and cameras, and informs me if something has failed. The advisories allow me to quickly get the equipment back in service and doing its job: protecting my company and our customers.

DSD™ gives me peace of mind.

### 7. Summary and Conclusion

Organizations that are heavily dependent on video security for evidence gathering and the protection of assets need precise information on the status of their equipment on a minute by minute basis. This information must be accurate, global and controllable from a central location.

This is by far the preferred method accepted by the industry for reducing expenses related to the management, use and maintenance of video security systems.

DSD™ patented technology is the natural fit for this model by giving control and understanding of security threats in a real time. The custom interface assure past, present and future compatibility with many platforms thus increasing the products life cycle. The application delivers a complete solution to both the power users and front liners by providing a satellite view of every video component.

Building a system as capable and integrated as DSD™ requires complete integration with existing hardware and software. The DSD team undertakes a full evaluation of the process and the actions involved, and make it easy for you to move into the next generation of controlling your security resources.

When you're ready to make that move, the DSD™ team will be pleased to arrange a complete demonstration.

## **8. Appendix**

### **DSD™ technical specification**

DSD™ was developed entirely using Microsoft's .NET technology and is written in C#. It stores its data in Microsoft SQL Server 2005 database and uses SQL Server Reporting Services to generate its reports. Deployment of the Director application is simplified through the use of .NET's ClickOnce feature.

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