DigitalSafety Technologies

DigitalPatroller3

Product Features

For Version 2.1

Digital Safety Technologies Inc.
511 Davis Drive Suite 300
Morrisville NC 27560
Phone: (919) 627-6000

Contents

DP3 Version 2.1 Product Features

Welcome to DP3 from Digital Safety Technologies. The DP3 system sets the standard in Future-Proof™ engineering, which guarantees that your Mobile Digital Video investment will continue to keep pace with new technologies as they become available.

Our goal is to continue to develop the most rugged and dependable mobile digital video solutions for public safety. We are proud of our record of continuous product improvement and strive to meet the needs of our large and diverse customer base.

It's a simple law of physics: *Equipment that has moving parts will eventually fail.* The core DP3 system consists of solid-state components that have no moving parts. As a result of this smart design, your Future-Proof DP3 equipment should provide you with reliable service and up-to-date features for many years.

What's New with release 2.1

More cameras

DP3 now supports zoom control for two cameras and now supports up to four cameras in a vehicle.

LCD monitor brightness controls

The LCD Monitor now automatically adjusts for ambient lighting.

Configuration improvements

All Back Office Services and Configurations are now able to use DNS names, instead of static IP addresses.

New file retention features, moves now supported

Improvements in the Retention subsystem, including automatic rule-based file moves.

Better storage management

More options for multiple network storage locations.

DVD Authoring

New ability to burn multiple evidence discs at the same time. Additional new templates.

Wireless docking with your MDT laptop

New ability to use your web accessible MDT laptop to perform wireless docking.

Video Streaming

New ability to stream live images from any vehicle that has the optional streaming equipment.

What is Future-Proof™ Design?

Future-Proof design provides the ability to integrate new technologies into existing equipment.

The Future-Proof design philosophy is simple:

- **Design hardware with plenty of headroom for upgrades.** The LCD monitor and the DVR are both computers, engineered with room to grow.
- **Design your system around widely accepted technology.** This ensures that the system building blocks will be around for a long time.
  - o In the vehicle, the DP3 system uses proven network technology for control and communication.
  - o The back office runs on Windows and uses Web browsers to access the data and control the system.

With each new DP3 version release, you get useful new features and capabilities.

System Overview

The DST DP3 system is an integrated third-generation digital video recording, transfer and storage system for public safety applications. System design is guided by feedback from a large customer base.

The controls in the vehicle and in the back office are intuitive, making it easy to record, find and manage your data. The DP3 solution sets the standard in evidence management, enabling easy Web access to evidence while maintaining a complete vehicle-to-browser chain of custody record.

Departments will benefit from the DP3 solution because DP3 has:

- Reliable solid-state hardware technology with no fans or moving parts of any kind.
- Web-based evidence management with no extra software to install on client machines. Users can retrieve incidents and author evidence for courtroom presentation from anywhere with Web access.
- File security. When viewing incidents or authoring a DVD, incident files remain on the back office servers and are never downloaded to a client machine.
- Web-based administration.
- Intuitive user interfaces.
- Ultra-secure evidence management and comprehensive chain of custody reporting.

Mobile Digital Video Recorder

With easy mounting options in the vehicle cabin or in the trunk, the DP3 digital recorder uses H.264 compression to deliver high-quality audio and video while conserving disc space.

The blazingly fast industrial solid state drive provides a major improvement over second generation equipment that still uses much slower spin drives, USB drives, or slower SSD technology for storage.

Other features include:

Waterproof cabling: All the peripheral equipment installed in the vehicle connects to the waterproof marine rated connector slots at the back of the DP3 DVR unit.

Sealed, ruggedized solid state construction: No fans, no air vents, no holes.

- The unit is waterproof to three feet submersion.
- DVRs may be equipped with a 32 or a 64GB solid state hard drive.
- Cast aluminum case.

DP3 Digital Video Recorder

Processing capability: The DVR is designed with future processing demands in mind. The processing capability combined with the industrial high-speed Solid State Drive enables support for more cameras, microphones and other peripherals without degradation of performance while maintaining a low power profile.

Tamperproof design: Your evidence is physically protected on the DVR's solid state storage drive, which is located inside of the sealed, ruggedized molded aluminum case. Offloaded files are subjected to 256 bit encrypted validation, resulting in file security that cannot be violated with current technology. **Note:** Current NSA estimates predict that the data will be secure for the next 10-15 years using this method of encryption.

Highly accurate GPS: The DVR accepts highly accurate SBAS compliant GPS signals, which means that it is compatible with both the North American WAAS and the European EGNOS.

Heavy-duty back-up power supply: Voltage levels of both the vehicle battery and the back-up battery are continuously monitored. As soon as the main power supply goes outside of the acceptable power range, the back-up power supply provides emergency power. If power levels ever reach a critical point, the system shuts down gracefully, ensuring that no data is lost.

Tracking and Reporting DVR Internal System Information: The DVR monitors and logs its status using internal sensors for temperature and voltage. Problems are reported immediately.

Troubleshooting and Remote Access to the DVR

If you experience a problem with a DVR, DST Support has special tools for remotely accessing the DVR, examining its condition and in many cases, fixing the problem on the spot.

Designed and assembled in the United States: Designed in Research Triangle Park, North Carolina specifically for public safety applications. Assembled and tested in an ISO 9001 compliant manufacturing facility located in the USA.

Encoder

The Encoder is a device that converts analog camera and microphone signals into digital streams, and then sends the digital streams to the DVR.

Most other companies embed their encoders in the same enclosure as their DVRs. DST made a strategic decision to use a separate encoder unit for three reasons:

Support for legacy units: The Encoder has plugs that fit older model DP-2 cameras and microphones. This enables our existing customers to upgrade to the DP3 system and still keep using their existing cameras and microphones.

Supports our Future-Proof™ design philosophy: IP “Super Cameras” are in development. This new camera technology will have much better resolution, better image compression and other features such as super zoom, night vision and Infrared detection. Because IP cameras put out a digital signal, they can plug directly into a DP3 DVR. An encoder will not be required. Other companies will not be able to use IP cameras, because their embedded encoders, which have analog inputs, cannot be converted to digital input.

Saves money and provides scalability: The DP3 system supports up to four cameras in a vehicle. This configuration requires two encoders. If you only need two cameras in the vehicle, you save money because you don’t have to buy a second encoder. You can also add new encoders and cameras to your system at any time.

Troubleshooting and Remote Access to the Encoder

If you experience a problem with an Encoder, DST Support has special tools for remotely accessing the Encoder, examining its condition and in many cases, fixing the problem on the spot.

Encoder Updates

DST provides “hands free” updates to the Encoder as needed. Updates are automatically pushed to the Encoder when the vehicle docks.

LCD Monitor

The LCD monitor is a resistive TFT touchscreen Intel Computer. The LCD is one of the options that you can use to control the DP3 in-car system.

LCD monitor

The LCD has many features that make it easy to use:

- Auto-completes and auto-corrects keyboard input.
- Self-trains to present most frequently selected states, colors and vehicles, enabling fast data entry.

- Presents a thumbnail slideshow to help identify an incident for playback.
- Supports gesture-type selections for camera switching and scrolling.

Troubleshooting and Remote Access to the LCD

If you experience a problem with an LCD, DST Support has special tools for remotely accessing the LCD, examining its condition and in many cases, fixing the problem on the spot.

LCD Monitor Chassis Features

The LCD monitor enclosure is made of a heavy-duty cast aluminum alloy. The control buttons on the front of the unit provide positive tactile feedback when pressed. A sensor on the front panel controls screen brightness, providing optimum illumination through a wide range of lighting conditions.

Additional LCD Features

- The LCD can monitor live audio channels from wireless Mics outside of the vehicle
- During playback, the LCD can pair any video channel with any audio channel.
- Login is optional. Where login is desired, the system can retain an officer's user ID across sessions.
- Supports high-speed wired, wireless and off-network docking.
- Automatically adjusts for ambient lighting.

MDT Laptop Monitor Application

You can use a laptop computer in the vehicle to control your DP3 system. DST recommends that you use a laptop that is ruggedized and has touch screen controls.

MDT laptop monitor application

No client software installation is required on the MDT; the in-vehicle control system uses a Web browser such as Microsoft Internet Explorer and Mozilla Firefox.

The MDT user interface is optimized for touch screens, but will also work with laptops that do not have touch screen capability.

The “Mini MDT” button shrinks the application to a narrow strip that contains the control buttons. This provides you with room to run other applications on your desktop while still maintaining control over your in-vehicle network.

MDT Software Upgrades in the Vehicle

The major advantage of using browser technology is that updates to the user interface are automatic. System updates, including changes to the MDT application are passed to the DVR during docking. Updates to the laptop are not required. Exceptions may apply if used for live streaming.

Zoom Cameras

DST offers two zoom cameras, a 22x zoom camera, and a 27x zoom camera both cameras are ruggedized, high-resolution (720x480), software-controllable cameras.

Color 22x Zoom Camera

Color 27x Zoom Camera

Both cameras feature:

- Automatic white balance, focus, exposure, back-light compensation
- Blinder LED, activated during recording, visible only to subjects within the camera field of view.

Smart internal software detects different lighting conditions and employs a range of presets to optimize the camera performance.

The “license” feature that automatically zooms in to capture a license plate can either be controlled by the officer, or set to trigger on a series of events, such as “lightbar on” and “door open.”

Low-Light Prisoner Camera

The low-light Prisoner Camera is a rugged, composite color video camera that has infrared LEDs to enable video capture in any lighting condition. This camera is used to monitor the passenger or rear seat of the vehicle.

Low–light Camera

DP3 Microphones - Overview

The DP3 system supports up to four Wireless Microphones and two In-Vehicle microphones.

Enhanced Wireless Microphone

The 2.4 GHz Enhanced Wireless Microphone, or “Mic,” has a maximum line of sight range of 1,200 feet.

Enhanced Wireless Microphone

In-vehicle Microphone

The in-vehicle microphone comes standard with each DP3 DVR. This small, easily hidden microphone is used to capture audio in the vehicle cabin. This Mic is usually installed along with the optional DP3 prisoner camera.

In-vehicle Microphone

GPS Module and GPS Forwarding

The DP3 In-Vehicle system uses the most advanced GPS tracking technology that is available for civilian use. The GPS data stream is part of the metadata that the system displays during video playback.

DST GPS Module

DP3 accepts highly accurate SBAS compliant GPS signals, which means that it is compatible with both North American WAAS and European EGNOS formats.

File Integrity of Digital Streams

The DP3 system is designed for file security. In addition to validating files with 256-bit encryption, the system also employs special proprietary techniques and redundant safeguards to ensure file integrity.

During docking, every file on the DVR is checked, or “hashed” to make sure that the file that arrives on the Docking Server is identical to the file that is on the DVR. Hash verification is also performed anytime that data is relocated in the system.

Data Transfer System (Docking)

The DP3 system is engineered for fast and secure docking. The high-speed solid state storage drive on the DVR enables the fastest docking speeds available. Although video is encoded on the DVR using the standard H.264, file security is ensured by enclosing files in a proprietary file container, ensuring that stored files are only readable using a DP3 browser interface.

Docking Overview

With an LCD monitor installed, the vehicle can dock using any or all types of docking:

- Wireless Docking
- Wired Docking
- Removable storage card docking with USB sticks or SD cards

With an MDT laptop, the vehicle can dock using the following two options:

- Wireless Docking with an optional wireless bridge, or some other form of Web access.
- Wired Docking.

During docking, the system validates each file using a technique known as “hashing.” The hash process ensures that each docked incident is identical to the original recorded incident.

The DP3 system is designed to handle partial or incomplete docking sessions. If for any reason the docking session is terminated before file transfer is complete, the system detects it and immediately attempts to gracefully re-establish the connection. If the connection cannot be re-established, the DVR will only erase incidents that were successfully transferred to the Docking Server.

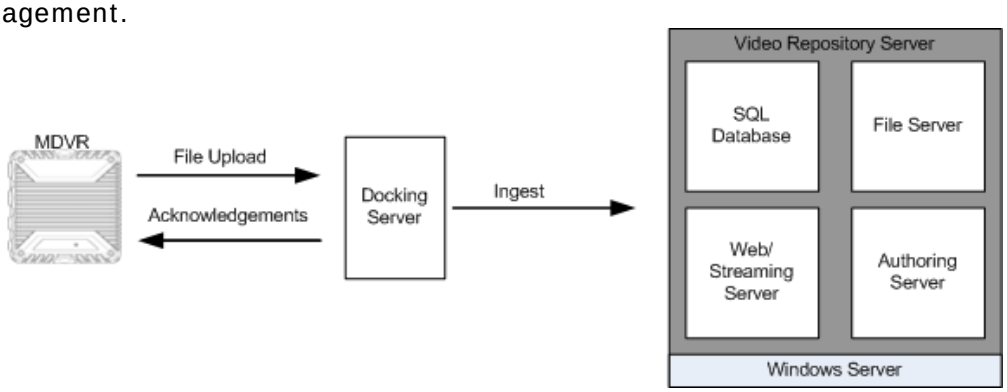
Docking Server

The Docking Server serves as the gateway to the back office by managing file transfers between DVRs in vehicles and the Video Repository Server (VRS).

When files are uploaded, they are not removed from the DVR until an authenticated response is received from the Docking Server.

Docking progress is displayed for the officer in the vehicle through either the LCD or the MDT. Docking progress is also available to the System Administrator on the back office side using the Docking Server Monitor.

From the Docking Server, the files are ingested into the VRS and stored. The VRS resides on a Windows Server platform and uses an SQL database for data management.



DP3 Docking Components

Tools for Visualizing the Docking Process

- The DP3 system provides both vehicle-side and server-side real-time progress indicators during docking.
- Estimated docking finish time is displayed on both the MDT and on the LCD monitor. This enables the officer who is docking to manage his or her docking time more effectively.
- For the System Administrator, the *Docking Monitor* provides a live dashboard of all docking activity for a particular Docking Server.

Viewing docking progress in the vehicle with the MDT

While docking is active, the officer's laptop MDT shows a progress bar at the bottom of the screen that provides a running estimate of how long it is going to take to dock.

Docking Progress Bar with time remaining and % complete estimates

Viewing docking progress in the vehicle with the LCD

While docking is active, the officer's LCD monitor presents a status box that lists docking progress.

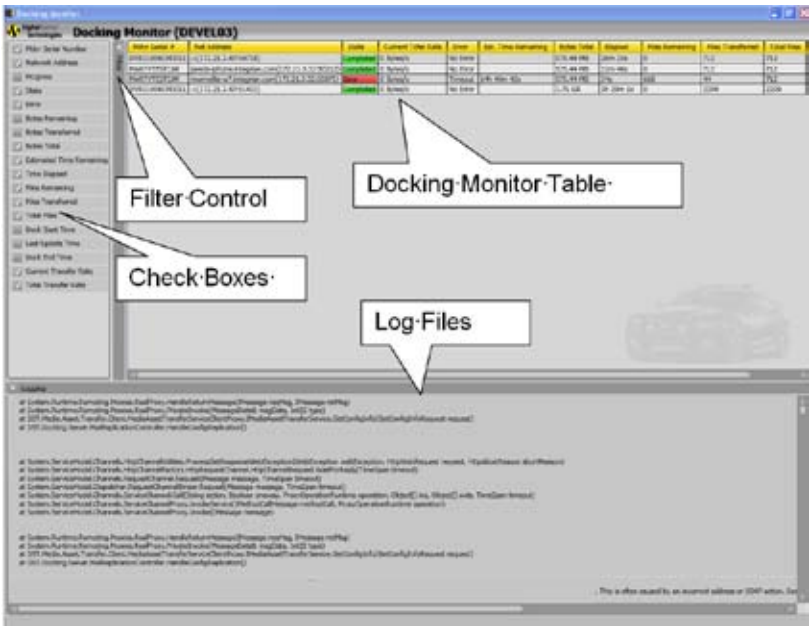
LCD status box shown during docking

The status box provides % completed and estimated time in hours, minutes and seconds before docking is finished.

Viewing docking progress in the back office with the Docking Monitor

The Docking Monitor is a tool for System Administrators. The Docking Monitor is installed on the Docking Server and provides real-time docking information for each vehicle that is docking. Some of the statistics available for viewing are estimated time remaining, current transfer rate in Mb/sec, total transfer rate and bytes transferred.

The operator can select the columns that they want to view using check boxes.



Docking Monitor Display Screen Features

Wireless Docking

Wireless Docking is performed using the LCD Monitor, or with an MDT that has a wireless card. The system uses the 802.11a/b/g/n wireless data transfer protocol. When using the 802.11n protocol, the system can broadcast on either the 5.0GHz or the 2.4GHz band. The LCD Monitor is optimized for maximum performance with dual high bandwidth MIMO antennas.

In a typical DP3 wireless docking scenario, the officer enters a wireless docking zone and initiates a docking sequence by selecting the DOCK button. During docking, the LCD or the MDT provides visual feedback about docking progress. Wireless docking uses hashed validation to ensure file authenticity.

"Hands Free" wireless docking

You can configure wireless docking so that docking initiates automatically whenever the vehicle enters the range of the wireless docking station. The docking process will automatically finish when the vehicle passes out of range and pick up where it left off the next time the vehicle comes within range again.

Wired Docking

The Wired docking system consists of a Docking Station, most often located at police headquarters. The Docking Station contains weather-resistant wall or pole mounted cables that connect to the vehicle.

Off-Network docking

The LCD Monitor supports docking using portable memory devices, including SD Storage cards, USB hard drives and USB memory sticks. This method of docking is referred to as "Off-network Docking".

Off-network docking is done using the following process:

1. Officer plugs the memory device into the LCD and then selects the **Dock** button.
2. System copies all stored incidents on the DVR to the card.
3. Officer transports the memory unit to an off-network docking station, where the contents of the memory unit are uploaded to the Docking Server.
4. Officer returns the memory unit to the LCD monitor; plugs it in and presses the **Dock** button.
5. System reads encrypted erase codes from Docking Server and erases the files that were successfully transferred to the Docking Server.

If the memory device is lost, the original data is not lost because it is still retained on the DVR. If the portable memory device is lost, the officer has several options:

- The Officer can dock again with another memory device and follow the same procedure for docking a memory device.
- The officer can perform a wired or wireless docking operation.

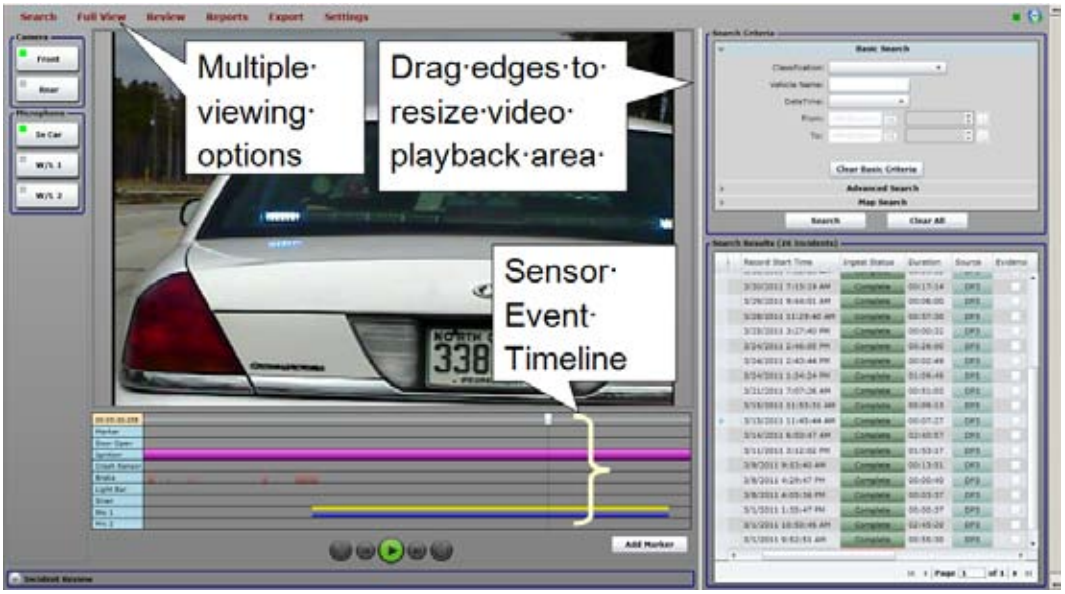
With either method, the original data on the DVR is retained until the DVR receives an authenticated message from the Docking Server, indicating that the files were successfully transferred.

Incomplete Data Transfer

The DP3 system is designed to handle docking interruptions gracefully. If a docking session must be terminated for any reason, such as because the Officer must respond to an emergency call, the officer can simply unplug the connection and leave the area. When the officer is ready to return, docking can resume normally.

DP3 Video Evidence Reviewer (VER)

Video Evidence Reviewer (VER) is a software application for managing video evidence after it has been docked. VER operates inside of a Web browser. With VER, you can search for, view, edit and manage incident files from any computer that has fast Web access. Logons to VER and access to different types of video evidence are granted to system users through the Enterprise Admin client (EAC) user interface, which is a separate DP3 application reserved for System Administrators.



DP3 Video Evidence Reviewer (VER)

Features of the Video Evidence Reviewer System

The DP3 Video Evidence Reviewer or "VER" operates using a Web browser. This method of accessing video evidence is designed to provide the following benefits.

- **Convenience:** Authorized employees can access evidence from any location that has a computer with Web access.
- **Security:** During playback or review, no local copy of the video is made on the client machine; the video is always kept secure within the Video Repository Server (VRS).
- **No waiting time:** Video playback commences almost immediately.

The intuitive user interface enables you to take advantage of the following features with minimal training:

Basic and Advanced Search: You can search on practically any attribute that an incident has. Basic Search contains just the attributes that you use all the time to find an incident: date ranges, vehicle and classification. Advanced Search contains everything else: Officer Name, vehicle characteristics and subject characteristics.

Custom classifications: You can rename or create new classifications for your incidents. Changes are pushed to the vehicle during docking.

Video Playback Controls: You can jump to any point in an incident and start playing with one click on the video timeline.

Marking and unmarking points of interest: During playback, you can mark any point in the incident and add a note to each location that you mark. Markers can also be moved and deleted with the click of a mouse. Button controls enable you to instantly jump to any marker in the video timeline.

Multiple Display Options: You can work in any mode that suits your preferences:

- Search, playback and classify an incident in a single Web browser window.
- Expand to full screen Playback, or Review mode.
- Size your browser window and run other applications on your Windows desktop.

Transferring Evidence to DVD

The Video Evidence Reviewer (VER) enables authorized users to burn evidence to disc. The process is fast, easy and secure. You can set policy to control:

- Which users can author evidence
- The physical location where the evidence can be burned.

The VER system provides flexible options in how disc authoring privileges are granted. Trusted users can burn evidence on their own computers, or incidents can be sent to a secure area to be burned.

The DP3 system provides two options for outputting evidence files:

1. You can export an incident to a DVD that can play in a DVD player, this is called an ".iso" file.
2. You can output an incident in a ".wmv" file format, which can be played on a computer using a variety of media players, including Windows Media Player.

Viewing Real-Time Images Streamed from a Vehicle

You can now view streaming images from any vehicle in your fleet. With the optional real-time streaming feature, you can use your web browser to see live camera views from anywhere that has web access.

The number of frames per second that you receive depends on the speed of the network and equipment used.

The streaming application also provides live data feeds, including GPS location and DVR storage information.

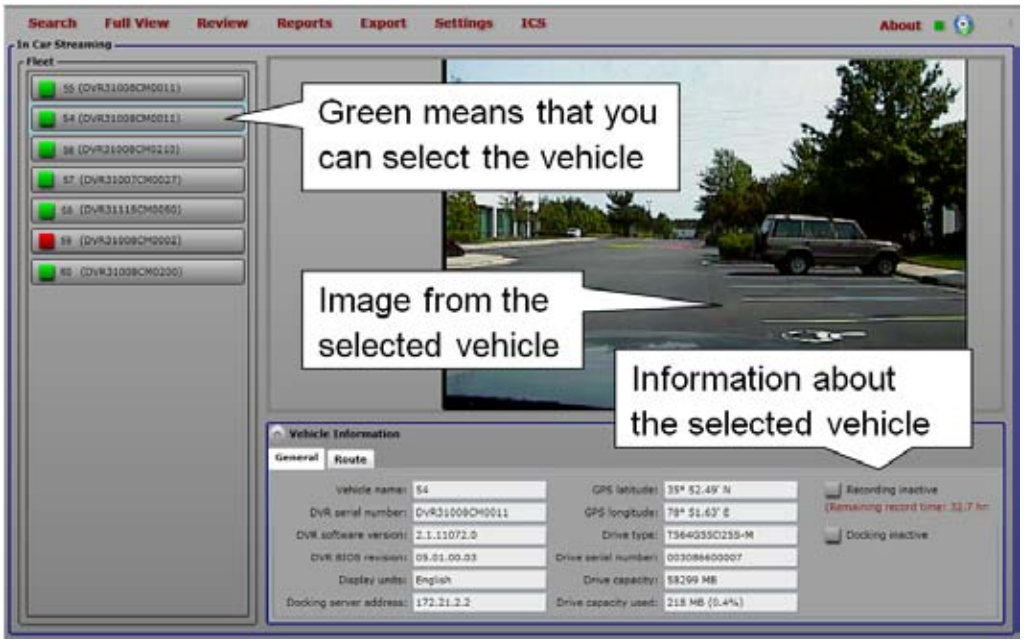


Figure 1 In – Car streaming application

DP3 Administration (EAC)

The Enterprise Admin Client (EAC) is a Web-based system tool that your system administrators use to manage the DP3 system, including incident retention, system users, vehicles, storage locations, and docking. The Enterprise Admin Client enables you to manage your system from any computer that has a broadband internet connection. Features include:

Retention Policy Management: Enables you to set rules that determine how long incidents are retained on the system before they are deleted. This feature also enables you to specify the storage location for any type of incident.

System Security: Enables you to add or remove users, manage viewing rights, grant access privileges and generate activity reports.

List Management: Provides you with the ability to customize incident classifications and other list names. With this feature, it is easy to change the

name of a classification such as “DUI” to “DWI”. The system is designed so that after the name change, the system will find both the new and the old names while executing a search.

Storage Management: Add, remove and manage Video Archive storage locations.

Fleet Management: Enables you to configure vehicles. After the DP3 system is initially configured and installed in the vehicle, most changes or updates are set up with the Admin UI Fleet Management tool. The Fleet Management tool enables you to manage your vehicles without the need to touch the vehicle. With the Fleet Management tool you can:

- View and modify vehicle configuration settings. After you instrument new vehicle settings, the system pushes the new settings to the vehicle automatically.
- Push factory authorized software upgrades.

Audit log: The Audit log provides a record of actions that were performed on the system. If an administrator changes a retention rule, for example, the audit log notes the change and makes all activity available in report form.

Server Management: Enables you to authorize disc burning devices.

Reporting and Analysis

DST recognizes the value of data. The tremendous amount of data that the DP3 system collects can be organized into actionable information with unlimited possibilities. With the DP3 system, powerful data queries lead to problems solved and opportunities seized:

- We are accused of racial profiling in a lawsuit, but a simple data query showed the accusation to be false.
- Federal highway funding is available to fix dangerous intersections. We have the data to get the grant.
- A problem bar owner has his license up for renewal. We can show how many DUI arrests were made within three blocks of his bar in the last year.
- We need a new patrol car. Now we can show the city council that each new patrol car brings in about 75K in extra revenue per year.

While the above examples are hypothetical, the DP3 system has the ability to collect the data that you need to answer these types of questions. The robust SQL database is designed to accept complex queries and generate ad hoc reports that you can use to see the big picture and make informed policy decisions.

Standard reports

Standard reports that come with the DP3 system are as follows:

- **Racial Profiling:** This report provides a graphical summary of the racial make-up of all incidents or by selected types of incidents.
- **Chain of Custody:** This report summarizes all actions performed on a particular incident.
- **Storage Utilization:** This report summarizes all DP3 storage locations and available disc space.
- **Validation:** This report provides confirmation that video footage recorded in a vehicle has not been altered.
- **Docking:** This report lists all vehicle docking events known to the database. The table can be exported to a spreadsheet for further analysis.

All reports can be printed and exported to a spreadsheet or to a .pdf file.

DST DP3 Support

You can get support for DP3 equipment by calling or using email.

The DST support contact information is:

Phone: (800) 972-0373

Fax: (919) 627-6099

email: support@digitalsafetytech.com

You can also get more product information and downloads on the DST Web site. Please call Support if you need a logon.

Website: http://www.digitalsafetytech.com/

Contact Us

If you have any questions, or would like more information, please call or write.

Digital Safety Technologies Inc.
511 Davis Drive Suite 300
Morrisville NC 27560
Phone: (919) 627-6000
Fax: (919) 627-6099

sales@digitalsafetytech.com

DigitalSafety Technologies

Serving those who Protect and Serve the Public