

MobileView™, Depot Manager 1.1 A&E Specifications



# Overview

* 1. MobileView Depot Manager shall be as created and distributed by UTC Building & Industrial Systems or an approved equal.
	2. The Depot Manager software enables security related personnel to easily and remotely gather video evidence, monitor live situations, and configure and maintain a video surveillance system over Ethernet consisting of digital video recorders (DVRs) and analog video cameras.
	3. Supported DVRs include:
		1. MobileView III
		2. MobileView 3004
		3. MobileView 3008
		4. MobileView 3012

# Architecture

* 1. Depot Manager shall be a client/Server application.
	2. The Client application shall be ran within a compatible web browser.
	3. The Main parent dialog and all corresponding child dialogs shall adhere to standard Windows controls where applicable.
	4. Services shall support dynamic assignment to master, slave, or local controller roles.
	5. Controllers intended only for Master role shall have an installation option that eliminates connection to recording devices.
	6. Local controller Client display shall have dynamic status indicating whether the master is online.
	7. The application shall accept Client connections only while in master or local controller roles.
	8. The application shall automatically forward Client connections to the master controller.
	9. Local controllers shall not forward existing Client connections when the master comes back online.
	10. Simple file copy routines between computers shall use CIFS.
	11. Depot servers shall have the ability to act as a DNS server.
	12. Depot servers shall have a local database that provides temporary and permanent storage of data.
	13. Data stored in a local database shall be that required to facilitate performance of function & tasks at the local depot.
	14. Depot Manager Client shall be able to monitor and control multiple Depots (i.e. Depot Servers) and their associated devices simultaneously.

# System Requirements

* 1. Depot Server shall run on a Windows Server operating system with the following minimum configuration:
	2. Operating System: Microsoft Windows Server 2008 R2 64-bit
	3. Web Service: Microsoft Internet Information Services (IIS) 6.0 or higher
	4. Database: Microsoft SQL 2008 R2; Microsoft SQL Express 2008 R2
	5. Microsoft .NET Framework 4.0
	6. Client application shall run on a standard Windows operating system with the following minimum requirements:
		1. Microsoft® Windows XP Pro SP3 or higher 32-bit
		2. Microsoft® Windows 7 32/64-bit
		3. Microsoft® Windows 8
			1. Microsoft .Net Framework 4.0
			2. Microsoft Internet Explorer 9, 10
			3. Mozilla Firefox 11
			4. Google Chrome 15
			5. Safari 5

# Software Distribution & Licensing

* 1. DM shall be licensed software.
	2. Server software shall be licensed “per server”.
	3. License fee shall include rights to install Depot Manager on a single machine designated as a Depot Server or Master Depot Server.
	4. When installed as a Master ONLY, connection to recording devices shall be disabled.
	5. Software license shall be license governed by a signed license agreement.
	6. Entry of a unique license activation key shall be required.

# Language Support

* 1. Depot Manager shall be available in English.

# Installation

* 1. The Server installation process shall feature a setup.exe that launches an Installation Wizard with all included prerequisites.
	2. The Depot Manager system shall require designating one server as the Master Depot Server
	3. Sites with a single server shall designate it as the master.
	4. Sites with multiple servers shall designate one as the master with the ability to promote or demote a server without data loss.
	5. Client connection to DM shall be done through a local common web browser. Any required software will be pushed to the client from the server.

# Uninstall

* 1. Depot Manager shall be uninstalled from the Windows Add/Remove Programs Dialog.

# Upgrades

* 1. Depot Manager Services and Database shall be upgradeable to future versions of the software without harming the existing data.
	2. Upgrade of client shall be pushed to the user from within the browser session.

# Initial Login

* 1. User shall have the ability to access the application via a Client icon on the desktop or via a shortcut in the Windows Start Menu. This icon will access Depot Manager Server via the designated Internet Browser on the given machine.
	2. After successful login, Depot Manager shall present the user the System Dashboard.

# Address Book

* 1. The Depot Manager shall include an Address Book containing a repository of all Depots, and devices that connect to the system.
	2. The Address Book shall be stored on the Depot Manager Master Server in a multi-server installation.
	3. The Address Book shall be replicated to all Depot Manager servers on a routine basis such that local access is available should connection to the Master Server be unavailable.
	4. The Address Book shall contain information for connection to supported network devices and information data stores.
		1. Depot Server
		2. IP Address or DNS Name
		3. Port
		4. Device
		5. Vehicle ID
		6. Device Model
		7. Device Hostname
		8. Serial Number
		9. Primary MAC Address
		10. Primary IP Address
		11. TCP Port Assignment
		12. Alternate Connection
		13. Connection Type
		14. Connection Details
		15. Vehicle Type
		16. Vehicle Manufacturer
		17. Max Video, Audio, Alarm, & Relay Channels
		18. Network Status – Online or Offline
	5. The Address Book shall auto-update status for the listed recording devices as to whether it is “Online” or “Offline” in real time.
	6. The Address Book shall include a function to manually initiate a network status check of single, multiple, or all recording devices.
	7. At time of initial system setup, Administrators shall be able to populate the Address Book data fields manually or automatically when discovered.
	8. Upon invoking the Address Book from the Depot Manager Client, the Administrator shall have the ability to automatically populate the database with any new devices currently discovered.
	9. Upon discovery, the device shall be listed in the Address Book with a “New” status.
	10. Black List - The system shall support a “Black List” filter which allows the user to designate a vehicle to the Black List.
	11. The system shall record the depot check in History and shall be configurable (default shall be 90 days).

# System Dashboard

* 1. Upon login, the System Dashboard shall be the primary interface to the user.
	2. The main dialog shall consist of customizable “widgets” that will aggregate information for the user on a specific system topic.
	3. The user shall have the ability to filter information on a widget to only show exceptions pertaining to information in the fleet.
	4. Each widget shall feature a configuration dialog where all settings can be configured for that widget.
	5. The system shall provide the user the ability to customize the System Dashboard by moving widgets around on the page per their prioritization and intent.
	6. The state of widget location and customization should remain intact upon login/logout.
	7. Widgets shall be located on the System Dashboard. Widgets displayed:
		1. Health Diagnostics
		2. Camera Checks
		3. Maintenance Case Status: User specific and System Wide
		4. Depot Health
		5. Video Downloads: User specific and System Wide
		6. Device Health
	8. Health Diagnostics Widget: Provides the ability to view health diagnostic

exception for devices to determine “Go/No Go” decisions on vehicle deployments.

* 1. Camera Check Widget: Provides the ability to view status of camera checks: failed, pending and reviewed.
	2. Maintenance Case Widget: Provides the ability to view, add, and delete evidence cases.
	3. Depot Health Widget: Provides the ability to show if Depots are communicating.
	4. Video Download Widget: Provides the ability to view, add, edit, and delete video download parameters and results.
	5. Device Health: Provides the ability to view any devices that require maintenance.

# Device Configuration

* 1. Depot Manager shall provide the ability to remotely configure networked devices and manage linked and saved configurations.
	2. Configuration parameters shall include all options configurable via devices’ local settings.
	3. Where configuration is limited by legacy hardware, appropriate messaging shall alert the user.
	4. Scheduled distribution of device configurations shall be supported.
	5. Scheduled distributions shall not resume if a vehicle leaves a Depot prior to completion of a transfer.
	6. Configuration distributions shall be done individually or in bulk to many like-devices simultaneously.
	7. Support for one, multiple, all, and none device selection shall be available.
	8. The system shall support assignment of a device configuration to a configuration profile.
	9. User shall be allowed to edit or delete configuration information stored in a profile.
	10. Configuration distribution success and failure shall be logged, easily displayed in status or reporting displays, accessible by query, and available for inclusion in automated emails.
	11. Automated email feature shall be configurable on or off.
	12. Email functions shall support multiple addresses.
	13. Depot Manager shall provide the ability to remotely upgrade firmware on networked devices.
	14. Firmware upgrades shall be able to be done in bulk to many like-devices simultaneously.
	15. Firmware upgrades shall be able to be scheduled for future times.
	16. The system shall provide the ability to email users when the firmware upgrades are successfully completed or failed.

# Scheduled Downloads

* 1. In a networked environment, Depot Manager shall provide the ability to schedule pulls of video from multiple devices individually or simultaneously.
	2. The maximum # of simultaneous downloads shall be configurable with a default of three (3).
	3. The following parameters are configurable for scheduled video pulls:
		1. Selection of one or more devices from the Address Book
		2. Date of Video
		3. Start & End Times
		4. Hours, minutes, and seconds with a 3 hour maximum range between start and end
		5. A 3 hour maximum download
		6. Whether to include the Primary or alternate stream but not both simultaneously
	4. Depot Manager shall save the original download parameters as part of the video file metadata.
	5. From within video file review list, user shall be able to launch a scheduled download form populated with data from a selected video file.
	6. Scheduled downloads shall be resumable. If a vehicle enters a Depot and does a partial download, it shall resume upon connection to a network until complete.
	7. Downloads are tracked by the Master Depot Manager and may resume at different depots.
	8. Downloads resumed from the same depot append to the previous file.
	9. Downloads resumed from a different depot are entered into a new file.
	10. User shall be able to manually play any part of the distributed file.
	11. Process may be manual or automated by schedule.
	12. When a video download is interrupted, there shall be configurations set with respect to maximum interruption attempts to resume the download.
		1. Number of attempts
		2. Interval between attempts
	13. Upon completion, interruption, or failure of a video download, the system shall have the ability to email multiple users for the following reasons:
		1. Download complete
		2. The device connection limitations have been reached
		3. There is a hardware failure in the device itself
		4. Video does not exist on the device
		5. Maximum interruption attempts have been reached
		6. Interruptions are when the device goes “out of range”
		7. Initiate request
		8. Cancel request
		9. Download location
	14. Depot Manager shall provide status of scheduled video pulls on a System Dashboard as follows:
		1. Schedule Request ID
		2. Device Name(s)
		3. IP Address
		4. Metadata (Primary/Alternate Video, GPS, Audio)
		5. Time/Date parameters
		6. Camera(s)
		7. Save to location
		8. Maximum file size you want on the requesting computer
		9. Resumable Download Parameters
		10. Email Parameters
		11. Cancel request
		12. Edit request
		13. Status
		14. Connection status
		15. Completion status (%)
		16. Count of current interruption attempts
		17. Last known vehicle Depot location
		18. Full and/or partial Metadata location (Video, Audio, GPS) if resumable
		19. Rate of download over the network
	15. Archive Priority: User shall have the ability to set archive priorities when they setup a scheduled download
		1. The user may set an archive priority of Low, Medium, or High
		2. When the vehicle pulls in, higher priority archives transfer first
	16. The wizard shall automatically download selected surveillance information to a user defined location.
	17. Upon final delivery, the user shall be responsible for burning files and playback software to the target media.

# Automatic Downloads

* 1. Automated downloads shall be configurable On/Off.
	2. Events that result in creation of alarm video will occur on vehicles while they are in service and offline from the network.
	3. Once the vehicles regain access to the wireless network, the Depot Manager Server shall automatically query devices for alarm video and ability to schedule download from multiple devices to a specified location.
	4. The maximum number of simultaneous downloads is configurable with a default of three (3).
	5. Automatic downloads shall be resumable. If a vehicle enters a Depot and does a partial download and then leaves, it shall resume upon connection to a network until complete.
	6. Downloads are tracked by the Master Depot Manager and may resume at different depots.
	7. When a video download is interrupted, the Depot Manager shall retry the download after a configurable delay period.
	8. Downloads resumed from the same depot append to the previous file.
	9. Downloads resumed from a different depot are entered into a new file.
	10. Low/High Bandwidth Archive Transfer: For supporting devices, the device shall allow user to set to record both Primary (High Bandwidth) and Alternate (Low Bandwidth) streams.
	11. When configuring a device for automatic download of alarm video, the Depot Manager shall provide an option to download only the alternate stream instead of the primary.
	12. Depot Manager shall save the original download parameters as part of the video file metadata.
	13. From within alarm video file review list, user shall be able to perform the listed tasks.
		1. Launch a scheduled download of the primary stream for the selected alternate stream file.
		2. Terminate download selected partial download
		3. Delete downloaded file
		4. Direct device to delete primary stream alarm file
		5. Unprotect the associated primary stream area and let it be overwritten
	14. When configuring a device for automatic download users shall have an option send notifications of said download to one or more email address.
	15. Initial Notification: Email shall contain details relevant to the scheduled download such as relative download schedule, Vehicle ID, input or event which triggered creation of the alarm video, time and date information, and estimated size.
	16. Interrupt Notification: Upon interruption of the download an email may provide transfer data which shall at minimum include transfer status, % remaining, reschedule information, and location of partially completed download.
	17. Completion Notification: Upon completion of the download an email may provide transfer data which shall at minimum include completion status and location of completed download.
	18. Once transfer of an alarm video is complete, the original alarm video shall be deleted from the device.
	19. Archive Priority: User shall have the ability to set an archive priority to specific vehicle types when automatic download jobs are configured.
	20. If supported by the device, users may configure archive priorities when they setup the alarm/event on the device.
		1. Available priority settings shall be Low, Medium, or High
	21. When the vehicle pulls in, higher priority archives transfer first.
	22. When downloading video events from devices that support onboard priority assignment, priority shall be nested such that transfers occur as provided above and then in the priority order specified by the device.

# Device Health Diagnostics

* 1. Depot Manager shall provide the ability to manually query of health diagnostic information from multiple online devices.
	2. Data elements in heath diagnostic query are device-dependent and Depot Manager shall expose every available element inherent to the device to the user.
	3. Those data elements are firmware dependent and will vary per device.
	4. The device’s SDK shall provide the ability to request those data elements from the device in order to aggregate the data at Depot Manager.
	5. Data elements for hardware devices shall include:
		1. IP v4 Address
		2. Subnet Mask
		3. MAC Address
		4. Gateway
		5. Model Name
		6. Serial Number
		7. Firmware Version
		8. Device Time/Date
		9. HDD Capacity
		10. HDD Status
		11. HDD Temperature
		12. Supported/Enabled Camera Channels
		13. Cameras or channels in Video Loss
		14. Cameras or channels in Alarm
		15. Supported Digital Inputs and State
		16. Supported Analog Inputs and State
		17. Supported Outputs and State
		18. System Temperature
		19. Current Client Connections
		20. Record Status
		21. Record Time Left
		22. Video Stored in hours
		23. Power On Duration
		24. Power On Delay
		25. Power Off Delay
		26. Countdown to Automatic Shutdown
		27. Device Export Time Left
		28. Fan Status
		29. Fuse Status
		30. Voltages
		31. GPS Functional Status
		32. Geo Location
		33. Expansion Memory Card Status
		34. WIFI Hardware Information
		35. Abnormal Power Loss
	6. Depot Manager shall provide a means of showing a summary status of systems whose last known state was fault.
	7. Depot Manager shall automatically poll simultaneous devices for health diagnostics:
		1. Configurable to 365 days
		2. Default to 90 days
		3. Diagnostic data that initiates email notifications
		4. Trigger items may include
		5. Total Device Health
		6. Cameras in Video Loss
		7. Cameras in Alarm
		8. HDD Status
		9. HDD Temperature
		10. System Temperature
		11. Record Status
		12. Fan Status
		13. GPS Status
		14. Abnormal Power Loss Status
		15. Wi-Fi Status
		16. Camera Check Information
		17. Multiple email addresses are comma separated
	8. Depot Manager shall allow an on-demand manual snapshot of a single device’s health via the Address Book.

# Video Viewing

* 1. Depot Manager shall provide the ability to view live video from a networked device and all of its associated cameras from within the Depot Manager GUI.
	2. Depot Manager shall launch DM PLAYER when playing video files.
	3. If a thick-client MV NAV is open, then Depot Manager shall prompt user to close current MV NAV session so Depot Manager can open the requested file in DM PLAYER.

# Centralized Video File Management

* 1. Depot Manager shall provide the ability to seamlessly manage access to partial data downloads on separate Depot Servers for the user.
	2. Depot Manager shall provide the ability to centralize indexes to partial data loads.
	3. Index centralization and synchronization shall be at scheduled intervals.
	4. Playback of video and other operations shall be seamless to the user despite the network location of the data.
	5. The system shall provide the user with feedback on the status/amount of time it will take to access data during playback in this distributed data context.
	6. Depot Manager shall provide status on the scheduled task on the System Dashboard to include:
		1. Schedule Request ID
		2. Device Name(s)
		3. IP Address
		4. Time/Date parameters
		5. Camera(s)
		6. Existing file locations
		7. Destination location
		8. Email Notification Upon Completion
		9. Including Email Addresses
		10. Cancel request
		11. Edit request
		12. Completion status (%) of each file to destination location

# Maintenance Management

* 1. Depot Manager shall provide the ability to add, edit, and delete a case to track maintenance of devices on vehicles.
	2. Maintenance Cases will be tracked via the System Dashboard
	3. Cases shall have the following parameters:
		1. Case Number
		2. Creator
		3. Creation Date
		4. Assigned Owner
		5. Vehicle and Device Metadata
		6. Free-form Notes Field
		7. Attachments
		8. Notes
		9. Health Diagnostic
	4. Depot Manager shall provide the ability to export case information in various standard formats such as HTML, formatted text (Word), CSV (Excel), etc. with related files and links to the referenced content.
	5. Related information may be supplied as compressed ZIP file.
	6. Case Management shall be a licensed feature.

# Camera Checks

* 1. DM shall provide the ability to compare a Reference Image versus the camera’s Current Image to see if the camera has been tampered with or altered in anyway.
	2. Capturing Reference and Current Images
	3. Once a camera has been installed, the system shall provide the ability to capture a reference image for a camera’s field of view
		1. This feature should be configurable to either On or Off
	4. The system shall provide the ability to designate any Current image as the camera’s Reference image at any time after a camera check is performed
	5. Automated Camera Check Download
		1. The system shall provide the ability to automatically pull camera checks for a device when it is online. The user shall be able to configure the feature as follows:
			1. Number of times per day to pull a camera check
				1. Configurable to 24 per day
			2. Time of Day
				1. “From” and “To” times are configurable
			3. Interval
				1. Configurable to 365 days
			4. Email
				1. The system shall provide the ability to email image checks alongside reference images to multiple email address

Emails shall be configurable On or Off

* 1. Manual Camera Checks
		1. Assuming a device is online, DM shall provide the ability for a user to pull a camera check via the Address Book on demand and outside of the automated process
			1. The system shall provide the ability to email the check along with general comments to multiple people
	2. Reviewing Camera Check Images
		1. Required: The first way to review a set of camera check images is for an operator to visually review those images
		2. Upon review, the system shall provide the operator the ability to select specific images from the set of check and reference images and automatically create and email with those image along with general comments to one or more recipients
		3. If the user selects HTML as the email format, reference and check images shall be shown side by side.
	3. Retention of Images
		1. The system shall provide the ability to limit the amount of time that camera check image data is kept
			1. Configurable up to 365 days
			2. Default is 90 days

# Security

* 1. The system shall require entry of security credentials to log on and off the client and server management applications.
	2. Upon initial login, the Administrator shall be prompted to change the default password.
	3. Authentication Complexity standards, system-wide, shall include:
		1. Maximum login failure attempts – N/A
		2. Username complexity – At least 6 alpha numeric characters
		3. Password complexity – At least 8 alpha numeric characters
	4. The Administrator shall answer any one of the challenge questions in order to reset the password.
	5. There shall be a password recovery procedure.
	6. The Administrator shall have full permission and capability to all features in the system.
	7. Administrator shall have the ability to add, edit, delete, inactivate, and reset users in the system, including:
		1. First Name
		2. Last Name
		3. User Name
		4. Password
		5. Email address
		6. Permissions
	8. Administrator shall have the ability to add, edit, and delete groups in the system, including:
		1. Group Name
		2. Ability to add users to the group
		3. Group Permissions
	9. The following permissions shall be supported:
		1. Access a depot server in local role
		2. By default, users have access to Depot Manager servers while they are in local server role
		3. Administrative users always have access rights to Depot Manager servers
		4. View Address Book
		5. Manage Address Book
		6. Manage Users/Groups/Permissions
		7. Manage Devices
		8. Health Diagnostics
		9. Camera Checks
		10. System Logs
		11. User Audits

# System

* 1. The user shall have the ability to access application-level system log files used for technical support and troubleshooting that include:
		1. System errors
		2. System Warnings
		3. Deleted files and reason codes for deletion
		4. Admin vs. System
	2. The system log files shall be real-time and filterable
	3. Access system logs from the recording device
	4. Log files shall be opened by hyperlink from the Depot Manager interface or scheduled for email to one or more addresses.
	5. Logging shall provide detailed diagnostic information.
	6. Logs shall be automatically deleted after a configurable duration.
	7. Users shall be able to automatically or manually export (save) logs to a user specified location before deletion occurs.
	8. Users shall be able to email log files or configure automatic e-mail of the log files.

# Depot Server Data Management

* 1. For data retention of video and images(.jpeg), the system shall provide the ability for the following:
		1. Automatically move data from a primary to a secondary, overflow location.
		2. Provide the ability to map a secondary, overflow data repository.
		3. Provide the ability to set a threshold on the primary repository for when to overflow data to the secondary repository.
		4. Provide the ability to send email notifications multiple email addresses when the secondary, overflow repository is reaching a certain, user-defined threshold.
		5. This notification shall feed the Video Status widget on the System Dashboard.
		6. Delete data
		7. Shall provide the ability to set a threshold in GB on the primary or secondary repository for when to delete data.
		8. Shall provide the ability to set a warning threshold in GB to send email notifications to multiple addresses when disk space nears that threshold.
		9. Shall provide the ability to configure how much data in GB to delete before stopping.
		10. Shall provide the ability to configure a data retention time in days for when to delete data.
		11. Data will be deleted in a FIFO manner
		12. Manual Deletion of Data
		13. Shall provide the ability for the user to manually deleted data from multiple depot servers.
		14. User Audit Trail
		15. Shall provide the ability to track user activity within the system.
	2. The user shall have the ability to brand Depot Manager with the following:
		1. Company Name
		2. Logo
		3. Branding will be visible from the System Dashboard and the Help Dialog.

# Help

* 1. Help content shall be available to the user from anywhere on the site.
	2. Help access shall be context-based.
	3. Once opened, Help content shall be indexed and searchable based upon topic.

# Standalone Player

* 1. The Depot Manager Player shall be a standalone player that can be used to replay any video clip that has been exported using Depot Manager.
	2. The Depot Manager Player shall support the same languages and system requirements as Depot Manager.
	3. The player shall auto-launch when media is placed in the PC.
	4. No part of the player should be installed on the PC where the files will play.
	5. The player must be able to play from the media itself.
	6. If a player has been saved locally, users can also launch the player by double-clicking the player icon in its file location.
	7. Windows Administrator rights are NOT required to launch the player.
	8. The GUI shall include standard Windows Dialog controls.
	9. The player shall automatically load any associated video clips in its play list from that directory.
	10. If only one file is available, automatically begin to play the single file.
	11. If multiple files are available, the user must select which one to play.
	12. By clicking the checkbox next to the clip in the play list, the video will automatically load in the viewing tile with all cameras in synchronous playback.
	13. Snapshot – allows the user to take a snapshot of the video.
	14. Print - allows the user to print a snapshot of the video.
	15. Maximize Screen – takes the player full screen showing only video.
	16. Go To – allows the user to enter a time/date parameter for playback.
	17. Each video will have a time/date stamp on it for evidentiary purposes.
	18. A timeline shall be provided.
	19. Allow the user to seek ahead or back in time for the video.
	20. Allow for FFWD, RWD, Play, and Pause.
	21. Frame Reverse and Frame Advance are device-dependent.
	22. All the ability to zoom in or out on live or playback video.
	23. Allow the user to turn audio on or off and adjust the volume.
	24. The player shall support the following overlays:
		1. Vehicle ID
		2. Time with milliseconds
		3. Maps
	25. The player shall support and make visible GPS metadata.
	26. The player shall support visual tracking of the vehicle on a map during video playback.
	27. The player shall support the ability to adjust Contrast, Brightness, and Hue of the video during playback.