For: SLS-ECMS8, SLS-ECMS32

PLEASE READ THIS MANUAL BEFORE USING YOUR SYSTEM, and always follow the instructions for safety and proper use. Save this manual for future reference.
CAUTION
Operate this device only in environments where the temperature or humidity is within the recommended range. Operation at extreme temperatures or in very high or low humidity levels may cause electric shock and shorten the life of the product.

CAUTION
Installation and servicing should be performed by qualified and experienced personnel only.

CAUTION
Do not use this device if fumes, smoke or a strange odor is emitted, or if it seems to function incorrectly. Disconnect the power source immediately, and consult your dealer.

LEGAL NOTICE

Observint Technologies (Observint) products are designed to meet safety and performance standards with the use of specific Observint authorized accessories. Observint disclaims liability associated with the use of non-Observint authorized accessories.

The recording, transmission, or broadcast of any person’s voice without their consent or a court order is strictly prohibited by law.

Observint makes no representations concerning the legality of certain product applications such as the making, transmission, or recording of video and/or audio signals of others without their knowledge and/or consent. We encourage you to check and comply with all applicable local, state, and federal laws and regulations before engaging in any form of surveillance or any transmission of radio frequencies.

Solstice is a trademark of Observint Technologies.

Microsoft, Windows, Windows Media, and Internet Explorer are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. Android is a trademark of Google Inc. Use of this trademark is subject to Google Permissions. Apple, iPhone, iPad and OS X are registered trademarks of Apple Inc. Intel and Pentium are trademarks of Intel Corporation in the U.S. and/or other countries.

Other trademarks and trade names may be used in this document to refer to either the entities claiming the marks and names or their products. Observint disclaims any proprietary interest in trademarks and trade names other than its own.

No part of this document may be reproduced or distributed in any form or by any means without the express written permission of Observint.

© 2013 by Observint Technologies. All Rights Reserved.
11000 N. Mopac Expressway, Building 300, Austin, TX 78759
For Sales and Support, please contact your distributor.
SAFETY INSTRUCTIONS

**Safety Instructions**

- To reduce risk of electric shock, do not disassemble this device.
- Use only the power supplies provided with the device.
- Defective parts must be replaced by original spare parts only.
- If you spill liquid on the SLS-ECMS, unplug it from the AC outlet to prevent possible fire or shock hazard, then consult your dealer for repair.
- When cleaning the device, turn it off first. Use a clean soft cloth moistened with a little bit of water to clean it.
- If the device does not work properly, return it to the dealer where it was purchased. Do not disassemble it by yourself.
- Do not use the device close to a heater, refrigerator or stove.
- Handle your SLS-ECMS with care; it contains a hard disk drive.
  - It is possible to damage hard drives if they are moved while their motors are still running. To allow the hard drive to spin down properly, wait at least 10 seconds after disconnecting power before moving the unit.
  - To avoid shock and vibration damage to the internal hard drive, do not move the unit while it is plugged in.
  - Protect hard disk drives from static electricity.
  - Do not stack hard disk drives or keep them upright.
  - Do not use an electric or magnetic screwdriver to fix hard disk drives.
- Do not place the unit in an enclosed area where the air flow through the cooling vents is impeded.
- Protect the power cord from being stepped on or pinched particularly at plugs and the points where they exit from the apparatus.
- Do not drop metallic parts through slots. This could permanently damage the device. Turn the power off immediately and contact qualified service personnel for repair.
- Do not overload outlets and extension cords as this may result in a risk of fire or electric shock.

**Important notice**

1. The manufacturer is not liable for potential damage caused by incorrect usage or placing the device in an unsuitable environment.
2. The device is not designed for outdoor use.
3. Do not use the device in an environment with strong vibrations.
4. Unauthorized modification of this device can damage it or cause fire.
5. Prevent contact with fluids; do not expose the device to high temperatures.
6. If the device malfunctions, contact your distributor.
# Table of Contents

## SECTION 1 Systems Overview

1.1 Models ............................................................................ 2

## SECTION 2 Installation and Setup

2.1 SLS-ECMS8 hardware features ........................................ 3

2.1.1 Switches and indicators ............................................. 4

2.1.2 HDD installation ....................................................... 5

2.1.3 HDD removal .......................................................... 7

2.2 SLS-ECMS32 hardware features ...................................... 7

2.2.1 Switches and indicators ............................................. 9

2.2.2 HDD installation ....................................................... 11

2.2.3 HDD removal .......................................................... 13

2.2.4 SLS-ECMS installation .............................................. 14

2.3 Discover utility ............................................................. 14

2.4 Configuration Wizard utility ......................................... 17

2.5 RAID Array Configuration utility .................................... 22

2.6 Adding NVRs to the CMS ............................................. 22

2.7 Managing NVRs with the CMS ...................................... 25

2.7.1 Setting the NVR configuration using the CMS ............. 25

2.7.2 Setting the NVR camera configuration using the CMS . 26

2.7.3 NVR video monitoring using the CMS ..................... 27

2.7.4 Create Views .......................................................... 28

2.7.5 Moving panels and frames ....................................... 30

2.8 Playback and export recordings ...................................... 31

2.8.1 Playback recorded data ............................................ 33

2.8.2 Export video segment .............................................. 34

2.9 PTZ camera control ..................................................... 35

2.10 Adding users to the system ......................................... 36

2.11 Firmware Upgrade ..................................................... 38

## SECTION 3 Settings Menu Reference.

3.1 Devices menu ............................................................. 40

3.1.1 Device Status list ................................................... 40

3.1.2 Network Grid .......................................................... 42

3.1.3 Authentication Grid ................................................ 42
# TABLE OF CONTENTS

3.1.4 Device trees ................................................................. 43
3.2 Managed NVRs ................................................................. 44
3.3 Users menu ................................................................. 45
3.4 Schedules menu ............................................................. 46
3.5 Action menu ................................................................. 47
3.6 Configuration menu ........................................................ 48
  3.6.1 Network menu .......................................................... 48
  3.6.2 Email menu ............................................................. 48
  3.6.3 Date and Time menu .................................................. 49
  3.6.4 FTP menu ............................................................... 49
  3.6.5 Storage display menu ................................................ 50
  3.6.6 Configure Storage button ......................................... 52
  3.6.7 Remote Access menu ............................................... 52
  3.6.8 Configuration Wizard ............................................... 52
  3.6.9 Customization menu ............................................... 52
3.7 System menu ............................................................. 53
  3.7.1 Shutdown / Restart menu .......................................... 53
  3.7.2 Firmware Upgrade menu ........................................ 54
  3.7.3 Factory Reset menu ................................................ 54
  3.7.4 System Log menu ................................................... 54
  3.7.5 Backup / Restore menu ........................................... 55
3.8 Preferences menu ........................................................ 58
  3.8.1 User Preferences menu ........................................... 58
  3.8.2 Change Password menu .......................................... 58

SECTION 4 System / Remote Access ........................................ 59
  4.1 Router setup guidelines ............................................... 60
  4.2 NVR setup guidelines ................................................ 60

APPENDIX A Status Monitor Definitions .................................. 62
APPENDIX B FAQ .................................................................. 63
APPENDIX C Solstice Mobile App for Android™ ......................... 64
APPENDIX D Solstice Mobile App for Apple® iPhone®, iPad® ......... 65
SECTION 1

Systems Overview

Thank you for purchasing a Solstice™ Network Video Recorder Central Management System! The Solstice CMS provides a hardware-based single management console for up to 32 NVRs, supporting up to 1280 cameras with a web-based client interface. The CMS provides the following management features for each NVR:

- Main Identification settings
- E-mail settings
- Date and Time settings
- Storage monitoring
- FTP settings
- Remote Access settings
- Shutdown and Restart
- Factory Reset
- Video monitoring, video record control and authentication settings for each camera
- Video playback for each camera

Special Features

- Custom text and video bookmarks
- Automatic recovery after power outage
- CGI in — external system data and events exchange
- Configuration wizard
- Customizable logo
- E-mail support — SMTP/TLS
- I/O devices data display and export — from managed Solstice and IPCorder NVRs and from cameras connected to the NVRs
- Managed SLS-ECMS and NVR status monitoring
1.1 Models

The Solstice CMS is available in two basic models, each with optional storage capacities.

<table>
<thead>
<tr>
<th>Model</th>
<th>Managed NVRs*</th>
<th>Solstice hardware</th>
<th>Managed cameras</th>
<th>Smartphone app</th>
<th>Storage (GB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLS-ECMS8</td>
<td>8</td>
<td>SLS-ENVR4</td>
<td>up to 320</td>
<td>iOS, Android</td>
<td>1TB (3TB max.)</td>
</tr>
<tr>
<td>SLS-ECMS32</td>
<td>32</td>
<td>SLS-ENVR2016</td>
<td>up to 1280</td>
<td>iOS, Android</td>
<td>1TB (6TB max.)</td>
</tr>
</tbody>
</table>

* Managed NVRs require firmware version 2.2.0 or later. The Solstice CMS supports both Solstice and IPCorder NVRs.

Supported NVRs

- Solstice or IPCorder NVRs with firmware version 2.2.0 and later
- Solstice SLS-ENVR4 and SLS-ENVR2016 series NVRs, and IPCorder KNR-090, KNR-200, KNR-1000, KNR-2000, KNR-5000, KRR-400, KRR-4000 series NVRs

Client System Requirements

The web-based client interface to the CMS supports the following computer system options:

- **Operating systems:** Microsoft Windows 2000, 2003, XP, Vista, 7, 8 (32-bit and 64-bit version) / Linux 2.6 and later, Apple Mac OS X 10.5 (Intel x86 only), 10.6 and 10.7
- **Browsers:** Microsoft Internet Explorer 8.0 and 9.0 (32-bit version), Mozilla Firefox 13 and higher and 3.6, Safari 5 and higher, Google Chrome
- **Java:** Java SE 6.0 and higher

Requirements for hardware configuration depend on type and number of connected cameras.

Networking (all models)

- **Ethernet:** 10/100/1000BASE-T, RJ-45
- **Supported protocols:** IPv4, TCP/IP, UDP, HTTP, UPnP, RTSP/RTP/RTCP, SMTP, FTP, DHCP, NTP, DNS, ONVIF, HTTP multipart
SECTION 2
Installation and Setup

2.1 SLS-ECMS8 hardware features

Special features:

- Manage up to 8 NVRs simultaneously
- Compact size and quiet operation
- Up to 3TB data storage with 1 HDD
- Power consumption - 12 Vdc, up to 24 w
- Automatic recovery after power outage
- Package contains:
  - SLS-ECMS8 with pre-installed HDD (1TB)
  - Power adaptor 100 – 240 Vac, 50/60 Hz to 12 Vdc
  - Network cable
  - CD with Discover Utility and documentation
2.1.1 Switches and indicators

Front panel

The front panel of SLS-ECMS8 includes four LED:

- The **Network** LED indicates the activity of the network adapter.
- The **Storage** LED blinks green if the hard disk is active, it lights red if the disk fails.
- The blue **Power** LED and red **Info** LED function as follows:

<table>
<thead>
<tr>
<th>Status</th>
<th>Power LED</th>
<th>Info LED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service mode is active</td>
<td>—</td>
<td>On</td>
</tr>
<tr>
<td>Normal mode is active</td>
<td>On</td>
<td>—</td>
</tr>
<tr>
<td>Found by Discover</td>
<td>On</td>
<td>Blinking</td>
</tr>
<tr>
<td>CMS is starting</td>
<td>Blinking</td>
<td>—</td>
</tr>
<tr>
<td>CMS is switching off</td>
<td>Blinking</td>
<td>—</td>
</tr>
</tbody>
</table>

- **Power ON / OFF button:**
  - If pressed for less than 3 seconds, disables an audible alarm signal (see **Acoustic Signals** below).
  - If pressed for more than 5 seconds accompanied by a beep, will power off the device normally.

**Acoustic signals**

Acoustic signals indicate the following:

- **A brief sound**: When the device is switched on or off by pressing the ON/OFF button.
- **A continuous sound** for one of these reasons:
SECTION 2: INSTALLATION AND SETUP

— If there is a problem with the hard disk (can be switched off by briefly pressing the front ON/OFF button).
— If the temperature of the device exceeds 140 °F (60 °C). The acoustic signal is accompanied by the blinking of a red light on the light strip. The sound can be switched off by briefly pressing the front ON/OFF button. Solstice will make an entry in the log, and can e-mail information if the SMTP is setup.
— If the temperature of the device exceeds 158 °F (70 °C). The acoustic signal is accompanied by the blinking of a red light on the light strip. The device will make an entry in the log, send an information e-mail if the SMTP is set up and will be automatically switched off.

Back panel

The back panel buttons / indicators function as:

- **Reset button / Power LED** (blue):
  To use the Reset button:
  — Press for less than 3 seconds to restart the device from Normal mode to the Service mode. If in Service mode, it will return to the Normal mode if Reset is pressed again.
  — Press and hold for 15 seconds to restart the device. **NOTE**: Recordings may become damaged.
  — Press and hold for 25 seconds while connecting the power cable to restore factory settings. All settings and recordings will be lost.
  **Power LED**: Indication is identical to the front panel Power LED.

- **Info / Reset LED** (red-green): When red, it is identical to the Info LED on the front panel. It is lit green when the Reset button was pressed for less than 5 seconds; blinks when the Reset button has been pressed for a moderately long time; blinks fast when the reset button has been pressed for longer than 15 seconds.

- **Storage LED** (red-green): combined red-green LED is identical to the Storage LED on the front panel.

2.1.2 HDD installation

The SLS-ECMS8 will accommodate one SATA I or SATA II HDD, up to 3TB. The HDD can be configured for RAID 0 or Linear recording.
SECTION 2: INSTALLATION AND SETUP

NOTE
The Solstice SLS-ECMS is preconfigured with a security-grade HDD(s).

Although most SATA HDDs will function in the SLS-ECMS, we recommend that only a security grade HDD manufactured by Seagate, Western Digital or Hitachi be used.

After installing the HDD, powering on the SLS-ECMS (see “2.2.4 SLS-ECMS installation” on page 14), and logging into the device (“2.3 Discover utility” on page 14), you will be prompted to execute an HDD RAID Array Configuration utility to set the RAID configuration of your HDDs (see “2.5 RAID Array Configuration utility” on page 22).

CAUTION
Always follow recommended electrostatic discharge (ESD) guidelines while performing this procedure. Install the HDD in a static-free environment, wearing a certified ESD wrist strap. If a static free environment and ESD wrist strap is not available, touch the bare metal of the SLS-ECMS chassis frequently when installing the drive to dissipate the static charge naturally generated on your skin and clothing.

1. Un-package an HDD.

2. If the SLS-ECMS is powered on, power it off (see instructions “3.7.1 Shutdown / Restart menu” on page 53), then disconnect the power adapter.

3. Use a hex wrench to remove the two retaining screws on the back of the SLS-ECMS, then pull off the back panel module.

4. Plug the back panel module onto the mating connectors on the HDD (see below).

5. Carefully slide the HDD and back panel module assembly into the SLS-ECMS enclosure until the back panel module is fully seated.

6. Tighten the two retaining screws until they are snug. Overtightening the screws can deform the enclosure.
2.1.3 HDD removal

Always follow recommended electrostatic discharge (ESD) guidelines while performing this procedure. Remove and install the HDD in a static-free environment, wearing a certified ESD wrist strap. If a static free environment and ESD wrist strap is not available, touch the bare metal of the SLS-ECMS chassis frequently when installing the drive to dissipate the static charge naturally generated on your skin and clothing.

1. If the SLS-ECMS is powered on, power it off (see instructions in “3.7.1 Shutdown / Restart menu” on page 53).
2. Disconnect the power adapter and network cables.
3. Remove the two retaining screws on the back of the SLS-ECMS.
4. Gently pull back panel module and HDD assembly away from the SLS-ECMS enclosure. Support the HDD to prevent it from falling.
5. Pull the back panel module off the end of the HDD to separate them.
6. Install another HDD in the SLS-ECMS following the procedure above.

2.2 SLS-ECMS32 hardware features

Special features:
- Manage up to 32 NVRs
- Compact size and quiet operation
- Up to 6TB data storage with 2 HDDs
- Power consumption - 12 Vdc, up to 48 w (typical with 2 HDDs)
- Automatic recovery after power outage
- Package contains:
  - SLS-ECMS32 with pre-installed HDD (1TB)
  - Power adaptor 100 – 240 Vac, 50/60 Hz to 12 Vdc and power cable
  - Network cable
  - HDD extractor (1 installed, 1 for 2nd HDD - 2 total)
  - CD with Discover Utility and documentation
SECTION 2: INSTALLATION AND SETUP

- SLS-ECMS32
- Power adapter with cable
- Software CD
- Quick Setup Guide
- Ethernet cable
- HDD extractor
2.2.1 Switches and indicators

Front panel LEDs indicate the following:

- **Network activity LED**: Lights when the network cable is connected, blinks during network activity.
- **Tray 1, Tray 2 active LEDs**: Blink when the HDD is accessed.
- **Power, Information LEDs**: These LEDs function as a pair to indicate the status of the SLS-ECMS. See the table below.

<table>
<thead>
<tr>
<th>Power LED</th>
<th>Information LED</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>—</td>
<td>—</td>
<td>Power supply connect</td>
</tr>
<tr>
<td>—</td>
<td>—</td>
<td>Off</td>
</tr>
<tr>
<td>On</td>
<td>Off</td>
<td>Normal mode</td>
</tr>
<tr>
<td>Off</td>
<td>On</td>
<td>Rescue mode</td>
</tr>
<tr>
<td>Blinking</td>
<td>Off</td>
<td>Starting</td>
</tr>
<tr>
<td>On</td>
<td>Blinking</td>
<td>Found by the Discover utility</td>
</tr>
<tr>
<td>On</td>
<td>Fast blinking</td>
<td>Factory reset in progress</td>
</tr>
</tbody>
</table>
Use the connectors, indicators and switch on the back of the SLS-ECMS as follows:

- **Control button LED**: Indicates the usage state of the control button (see table below)
- **Control button**: Pressing the Control button can affect the DVR in three different ways, depending on how long the button is pressed. Pressing the button for less than 5 seconds signals a "short" press, pressing the button for 5 ~ 10 seconds signals a "long" press, pressing the button for more than 15 seconds signals a "very long" press. The CMS reacts differently to these presses depending on the status. See the table below.

<table>
<thead>
<tr>
<th>Power LED</th>
<th>Information LED</th>
<th>Status</th>
<th>Short press (&lt; 5 s) (Control LED lights)</th>
<th>Long press (5 - 10 s) (Control LED blinks)</th>
<th>Very long press (&gt; 15 s) (Control LED blinks fast)</th>
</tr>
</thead>
<tbody>
<tr>
<td>—</td>
<td>—</td>
<td>Power supply connect</td>
<td>Start</td>
<td>Factory reset</td>
<td>—</td>
</tr>
<tr>
<td>—</td>
<td>—</td>
<td>Off</td>
<td>Start</td>
<td>Start</td>
<td>—</td>
</tr>
<tr>
<td>On</td>
<td>Off</td>
<td>Normal mode</td>
<td>Rescue mode</td>
<td>Shutdown</td>
<td>Hard shutdown</td>
</tr>
<tr>
<td>Off</td>
<td>On</td>
<td>Rescue mode</td>
<td>Normal mode</td>
<td>Shutdown</td>
<td>Hard shutdown</td>
</tr>
<tr>
<td>Blinking</td>
<td>Off</td>
<td>Starting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On</td>
<td>Blinking</td>
<td>Found by the Discover utility</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>On</td>
<td>Fast blinking</td>
<td>Factory reset in progress</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**SECTION 2: INSTALLATION AND SETUP**

- **Network connectors**: Used to connect the SLS-ECMS to an Ethernet network. The two ports ("1" and "2") can be used together for network load balancing, or in an active/standby configuration. Network connector 2 is disabled by default. See the Settings | Configuration | Network display for option selection.
- **USB connector**: For future use.
- **Power connector**: Used to connect the power adapter provided (12 Vdc) to the SLS-ECMS.

### 2.2.2 HDD installation

The SLS-ECMS32 will accommodate either one or two SATA I or SATA II HDDs, up to 3TB each. Although most SATA HDDs will function in the SLS-ECMS, we recommend that a security grade HDD manufactured by Seagate®, Western Digital® or Hitachi® be used.

**NOTE**  
The Solstice SLS-ECMS is preconfigured with a security-grade HDD(s).

If only one HDD is installed, it should be installed in the upper tray (Tray 1) and can be configured for RAID 0 or Linear (standard) recording. When two HDDs are installed, they can be configured for RAID 0 or 1, or Linear recording. However, if they are configured for RAID 1, the two HDDs must match to fully utilize the drives.

After installing the HDD, powering on the SLS-ECMS (see “2.1.2 HDD installation” on page 6), and logging into the device (“2.3 Discover utility” on page 15), you will be prompted to execute an HDD RAID Array Configuration utility to set the RAID configuration of your HDDs (see “2.5 RAID Array Configuration utility” on page 22).

**CAUTION**  
Always follow recommended electrostatic discharge (ESD) guidelines while performing this procedure. Install the HDD in a static-free environment, wearing a certified ESD wrist strap. If a static free environment and ESD wrist strap is not available, touch the bare metal of the SLS-ECMS chassis frequently when installing the drive to dissipate the static charge naturally generated on your skin and clothing.

1. Un-package an HDD, then install the extractor as shown below. To attach the extractor to the HDD, align the pegs on the side of the bar with the screw holes on the side of the HDD, then press them in until the bar is flat along the side of the HDD.
2. If the CMS is powered on, power it off (see instructions “3.7.1 Shutdown / Restart menu” on page 53), then disconnect the power adapter.

3. Remove the two retaining screws on the back of the SLS-ECMS, then carefully set the SLS-ECMS back cover to the side.

4. Slide the HDD(s), connector end first, into the trays inside the SLS-ECMS enclosure.
5. Apply even pressure across the back of the HDD to seat it onto the connectors inside the SLS-ECMS. **Do not** push in the HDD using the extractor.

6. Reinstall the SLS-ECMS back cover using the two retaining screws removed earlier.

### 2.2.3 HDD removal

**CAUTION** Always follow recommended electrostatic discharge (ESD) guidelines while performing this procedure. Install the HDD in a static-free environment, wearing a certified ESD wrist strap. If a static free environment and ESD wrist strap is not available, touch the bare metal of the SLS-ECMS chassis frequently when installing the drive to dissipate the static charge naturally generated on your skin and clothing.

1. If the SLS-ECMS is powered on, power it off (see instructions in “3.7.1 Shutdown / Restart menu” on page 53), then disconnect the power adapter.

2. Remove the two retaining screws on the back of the SLS-ECMS, then carefully set the SLS-ECMS back cover to the side.

3. Gently pull back on tab of the extractor rail to unseat the HDD from the connectors inside the SLS-ECMS.

4. Slide the HDD out and set it aside. **NOTE**: If only one HDD is installed in the SLS-ECMS, it should be in Tray 1 (upper tray).

5. If another HDD will be installed in the SLS-ECMS, follow the procedure above.

6. Reinstall the SLS-ECMS back cover using the two retaining screws removed earlier.
SECTION 2: INSTALLATION AND SETUP

2.2.4 SLS-ECMS installation

Step 1. Installing the SLS-ECMS on the LAN

1. Plug an Ethernet cable into the network connector on the back of the SLS-ECMS. Use network connector “1” on the SLS-ECMS. Plug the other end into a network access device, such as a network switch, hub, or router.

2. Plug the power adapter into the power connector on the back of the SLS-ECMS.

3. Plug the power adapter cable into the power adapter, then into a standard 120 Vac outlet. The SLS-ECMS should automatically power on within one minute.

2.3 Discover utility

Solstice Discover is a utility used to search for and localize an SLS-ECMS and Solstice and Koukaam IPCorder NVRs on the network. If you do not know the IP address of the device, it is possible to find it using the Discover utility. This utility is provided on the enclosed CD included with your SLS-ECMS.
SECTION 2: INSTALLATION AND SETUP

Unless the network configuration settings of your SLS-ECMS are preset, the SLS-ECMS is configured to use DHCP to acquire settings from a local DHCP server. If the server is not available, the SLS-ECMS defaults to a static network configuration with the IP address 192.168.1.78. The network configuration parameters can be set using the Discover utility, the Configuration Wizard utility (see “2.4 Configuration Wizard utility” on page 17), or within the SLS-ECMS web interface.

1. Power on your computer and allow it to boot up.

2. Insert the software CD into the optical drive and allow it to initialize (autorun). The screen shown below should open.

3. If Java is not loaded on your computer, click the Download Java button on the Solstice window, then follow the on-screen instructions to install it.

4. On the Solstice window, click the Start Discover button.

5. In the Discover window (see below) open the Use network interface drop-down list, then select the network where your SLS-ECMS is installed.

6. In the Solstice discover window, click the Discover button in the lower-right corner and wait until your SLS-ECMS is found. If the SLS-ECMS was not found during the scan, click the Discover button again. In the screen above, the entry found for an SLS-ECMS shows an IP address of 192.168.75.55, the MAC address, and the firmware level.
SECTION 2: INSTALLATION AND SETUP

NOTE
The MAC address (S/N) of the SLS-ECMS is shown on the product label on the underside of the unit.

7. Double-click the line for your SLS-ECMS in the Discover window. Depending on the state of the SLS-ECMS, one of the following screens will result:

a. If the SLS-ECMS is new (started for the first time) or just started after a factory reset procedure, the Configuration Wizard utility will open. See “2.4 Configuration Wizard utility” on page 17 to continue.

b. If the Configuration utility was used and the ECMS was not previously reset to the factory default configuration, a CMS web interface login window will open. Login to your CMS. The default values for Username and Password are admin and admin.

After logging into your CMS, one of three screens will open, depending on the status of your CMS. Continue with the appropriate procedure:

— If the SLS-ECMS is started for the first time after receiving if from your distributor, or a factory reset occurred previously, the Configuration utility will open. Continue with “2.4 Configuration Wizard utility” on page 17.

Or

— If the SLS-ECMS is started for the first time after a new (un-configured) HDD was installed, the RAID Array Configuration utility will open. See “2.5 RAID Array Configuration utility” on page 22.

Or

— If the SLS-ECMS is started after it was pre-configured, and the two conditions above don’t apply, the SLS-ECMS web interface Video window will open.
2.4 Configuration Wizard utility

The Configuration Wizard utility is a tool for setting up the basic configuration of your SLS-ECMS. It includes selecting the screen language, changing the default administrator password, setting the time format and SLS-ECMS clock synchronization, network settings, etc. The Configuration Wizard utility opens during the initial setup of the CMS, after a factory reset of the SLS-ECMS, and can be initiated through the SLS-ECMS web browser interface.

1. When the Configuration Wizard utility opens, a login window appears. Enter your administrator Username and Password, then click Log In. The default administrator Username and Password is admin and admin.

2. In the Configuration Wizard - Welcome frame, click the button next to “English” open the drop-down list. Select your preferred language, then click Apply and Continue.
3. In the **Configuration Wizard - Change default administrator password** frame, enter your new password in both fields, then click **Apply and Continue**. It is strongly recommended that you change the password to one with good security strength, an uncommon expression containing upper case, lower case and numerical characters. Password length should be at least 6 characters.

4. In the **Configuration Wizard - User preferences** frame, select the options appropriate for installation site, then click **Apply and Continue**.
5. In the Configuration Wizard - Date and Time frame, select the options appropriate for location, then click Apply and Continue. Note that an option is provided to synchronize the SLS-ECMS with your computer.

   **Date & Time**

   — **Allow NTP Synchronization**: If this option is selected, the SLS-ECMS automatically sets the time according to the selected NTP server and time zone. You can select your own NTP server. If you are unsure about which server to choose, leave the default selection pool.ntp.org.

   — **Set date and time manually**: Use this option to manually set the current time by directly entering the fields provided, or select the option **Synchronizes with this computer** to automatically set date and time with the computer you are using.

   **Time Zone**

   First specify the local time zone in which the SLS-ECMS is being used by selection of area and city. This may differ from the time of the computer from which we are connecting to the SLS-ECMS.

   **NOTE** Synchronize the camera clocks the same way the SLS-ECMS is synchronized.

6. In the Configuration Wizard - Network configuration frame, enter the network and domain options you prefer. In the Domain Settings section, you can specify a Hostname for your SLS-ECMS. Click Apply and Continue.
Automatic configuration (DHCP) - If you select this setting, the SLS-ECMS attempts to get the network settings from a DHCP server. The values entered in the fields IP address, network mask, gateway and DNS server are ignored. If Automatic Configuration (DHCP) is set and the DHCP server in the system is not active, the SLS-ECMS sets the IP address 192.168.1.78. With DHCP, the SLS-ECMS IP address may sometimes change. To ensure that the network configuration remains constant, we recommend that you select Static IP Address setting if possible, then set the network configuration manually. Consult with your network administrator to determine the best static network settings to use.

- **IP Address** - address, under which the SLS-ECMS is visible in the local network.
- **Network mask** - in most cases, you can copy the current mask shown in the Section Network Information.
- **Gateway** - address under which the router is visible in the local area network through which network communication flows to outer networks and the Internet.
- **DNS server** - address of the server which translates the DNS names to IP addresses. The address is often identical to the router address. If you do not specify the address of the DNS server or give an invalid address, it will not be possible to translate the domain names (e.g. Solstice.com) to an IP addresses, send e-mail messages, synchronize time with an NTP server, etc.
- **Present as UPnP device** - if checked, the SLS-ECMS is visible in the folder Locations in the Network in the Windows Explorer window.
- **Domain Settings** - in this section, you can set the device domain and hostname. **NOTE**: To send e-mail messages from the SLS-ECMS, the SMTP server must be configured to send messages from a device with that domain name.

7. Reconfirm the network configuration settings you entered, then click **Apply**.

8. In the **Configuration Wizard - E-mail configuration** frame, enter the SMTP settings and other e-mail options to automatically send e-mail when events occur. Click **Apply and Continue**.
SECTION 2: INSTALLATION AND SETUP

SMTP Settings

- **SMTP server**: Enter the SMTP address of the e-mail server.
- **SMTP TLS**: If the server supports encrypted connection, select this option.
- **Username** and **Password**: Enter the username and password you use to login to the SMTP server.
- **Admin E-mail**: Messages about transition to emergency mode should be sent to the address of the Admin E-mail, or other system messages, if these messages are enabled.

Advanced E-mail Options

If you want the e-mail messages to display a different sender’s address in the header, enter it in the **Custom sender address** field.

E-mail messages

In the Section E-mail messages, select the event for which the SLS-ECMS should send the e-mail message:

- **Send daily report about device health**: you will receive a message daily showing the SLS-ECMS device status. If the messages are not being received, you should expect that something is wrong - perhaps an SLS-ECMS fault or network failure.
- **Send e-mail when - Rescue mode is activated**
- **Send e-mail when - Storage location event**: The SLS-ECMS informs you about a fault on a hard disk or the RAID array.

9. In the **Configuration Wizard - Guide Completed** frame, click **Finish**.
2.5 RAID Array Configuration utility

If the SLS-ECMS is started for the first time after a new (un-configured) HDD was installed, the RAID Array Configuration utility will open.

1. If you have two HDDs installed in your SLS-ECMS, select the RAID type you want to use from the drop-down lists. NOTE: For information about RAID types implemented in the SLS-ECMS, refer to “RAID” on the website en.Wikipedia.org.

2. Click Create RAID Array then confirm your selection. Allow the operation to complete, then follow the on-screen prompts to continue.

3. Complete the device setup in the Configuration Wizard (see “2.4 Configuration Wizard utility” on page 17), then add cameras to your system (see “2.6 Adding cameras to the system” on page 23).

2.6 Adding NVRs to the CMS

After logging into the CMS as an administrator, a Java applet window similar to that shown below may open. Click Run to install the applet.
4. Click the **Settings** option in the header of the screen.

5. Click the **Managed NVRs** bar in the left frame, then click the **Add New NVR** button in the **Status** tab.

6. In the Add New NVR window, do the following:
   a. Enter the **IP address** of the NVR you want to add.
b. Open the drop-down list and select the brand of the NVR: Koukaam (for IPCorders) or Observint Technologies (for Solstice).

c. Enter the **Device Name** and **Device Identification**. The device name can be composed of alpha-numeric characters. You can enter an identification for the device, or use the one generated by the CMS. The identification code can contain only alpha-numeric characters.

d. Enter the **HTTP** port number of the NVR and an administrative Username and Password for the NVR.

e. Click the **Add NVRs** button to add the NVR to the CMS. A pop-up status screen will appear, then close. The NVR you added will appear in the left frame under “Solstice CMS”, and the NVR Status and statistics will appear in the right frame.

7. Click the **Add New NVRs** button again, then follow the previous step to add additional NVRs to the CMS.
2.7 Managing NVRs with the CMS

The displays for monitoring and managing an NVR with the CMS are nearly identical to those in the IPCorder or Solstice NVR interface. For additional information on use of and information shown on those displays, refer to the applicable Koukaam IPCorder user manual and/or the Observint Technologies SLS-ECMS Solstice NVR Central Management System User Manual (this document).

2.7.1 Setting the NVR configuration using the CMS

The CMS provides direct configuration management for basic settings of each NVR it manages. It also provides video channel and camera configuration management and monitoring for each camera. A Manage direct link to open the NVR interface in a new tab is provided on the NVR Status line.

1. The screen above shows two NVRs, named mybox and mybox-4, added to the CMS. Check the box for the NVR listed in the right frame to open configuration tabs for it. Click the tab to configure any of the following for the NVR selected:
   - Main (see above)
   - E-mail settings (setup email default values and automatic alert messages)
   - Date and Time settings (sets current time, time zone and city, and time synchronization options)
   - Storage (S.M.A.R.T. data monitoring and HDD testing)
   - FTP (configures NVR for default server for backing up recordings)
   - Remote Access (configures the network for remote connection (i.e., from the Internet) to the NVR)
   - Shutdown/Restart
   - Factory Reset

2. Click the Manage direct hyperlink to open the NVR interface in a new tab. From this access point, you can add cameras, manually initiate recording, backup recordings, and perform all other administrative functions on the NVR.
2.7.2 Setting the NVR camera configuration using the CMS

Through the CMS you can setup the camera configuration of each camera monitored by NVR.

1. In the CMS, open the Settings | Devices window (see below). The frame on the right, by default, lists the cameras configured on each NVR monitored by the CMS.

   a. In the frame on the left, you can open or close each NVR for listing its cameras in the frame on the right.

   b. In the right frame, click the Device Status, Network Grid, or Authentication Grid tab to show those properties for the cameras listed.

2. Check the box for the camera listed in the right frame to open configuration tabs for it. Click the tab to configure any of the following for the camera selected:
   - Main (see below)
   - Video (for configuring video stream properties and recording triggers and schedules)
   - Authentication (for setting the administrative credentials for configuring the camera)
2.7.3 NVR video monitoring using the CMS

After logging into the CMS that is configured with NVRs, thumbnails represent the video from all the cameras associated with the NVRs appear across the top of the window. To watch video streaming from these cameras, drag the thumbnail into a viewing frame.
Each viewing frame includes controls for manually starting and stopping record mode, retrieving recorded video, and opening a menu to perform other functions.

Items in the Menu include:

- **Select stream**: Allows you to select a stream provided by the camera. Note that higher resolution streams require more processing power of the NVR and use more network bandwidth.

- **Show Stream Details**: Selecting this option displays stream data onto the view in the upper right corner. This data includes the stream resolution, delay, bit and frame rates, and CODEC.
  - **Full Screen**: Opens the image to the full screen of the monitor.
  - **Save Snapshot**: Opens a menu to save the current image of the video.

- **Duplicate as Live**: Creates a duplicate viewing screen of the same video
- **Duplicate as Recordings**: Opens the Recordings timeline of the camera with playback options in another screen.
- **Sound volume**: Adjust as needed. This feature appears for cameras with microphones.

### 2.7.4 Create Views

Buttons across the top of the View frame are used to create different sized cells that allow you to group a specific set of live camera video and data into the same View frame. These frame setups can then be saved as a “View” that can be recalled later and modified, if necessary. Multiple Views can be created for any group of cameras and displayed simultaneously in separate windows.
To create a View, do the following:

1. Click the **Create new view** button to open the pop-up window shown below.

2. In the window above, enter a name for the view, select a template similar to the template you want to use for your view, then click **OK**. In the example above, I named the view **Cam 1 view w/params**.

3. Use the **Add row** and **Add column** buttons to construct the specific array of cells you want to fill.
4. Drag cameras, other devices, data parameters, etc. into each of the cells as needed.

5. Click the **Save View** button to retain the View.

6. Use the steps above to create additional "views" of your CMS system.

To display multiple "views" simultaneously:

1. Open the drop-down list in the upper-right corner of the View frame, then click the view you want to open.

2. Click the **New Window** button to detach the view from the main window, then drag it to another area of the desktop.

3. Open another view you created in the main window, click the **New Window** button, then drag it to a different area of the desktop.

4. Repeat as needed.

### 2.7.5 Moving panels and frames

You can move a panel from the one side of the window to the other by dragging the panel header to the other side.
2.8 Playback and export recordings

In the Video view, click the Recordings icon for the camera you want to playback or download video from. A timeline will open at the bottom of the window indicating when video and other recordings were made. In the screen below, the Recordings icons were clicked for both cameras.

The Recordings frame has several features, all controlled with a mouse. Playback control buttons (see above) are identified with standard media play function icons. Playback occurs at the time position of the Play position marker (white vertical bar, see below) and video played back is shown in the View frames above. The timestamp of the play position is shown in the upper right corner of the frame.
SECTION 2: INSTALLATION AND SETUP

Icons at the top of the Recordings frame include:

- **Playback rate** (speed): Click the icon to open a graphical popup frame, then drag the marker to increase or slow the play speed.
- **Expand / Contract**: Click to widen or condense the timeline. Expand is useful for marking a precise start and end time for video clips. Contract is useful for searching for video segments of interest.
- **Shift left / Shift right**: Moves the timeline left /right.
- **Center**: Adjusts the timeline position so the current time is at the center of the line.
- **Export video**: Opens a video export window. The video segment to export is defined by the positions of the Start marker (green bar) and End marker (red bar).
- **Open Legend**: Click to show the color coding of the timeline.

![Icons at the top of the Recordings frame include:

- **Playback rate** (speed): Click the icon to open a graphical popup frame, then drag the marker to increase or slow the play speed.
- **Expand / Contract**: Click to widen or condense the timeline. Expand is useful for marking a precise start and end time for video clips. Contract is useful for searching for video segments of interest.
- **Shift left / Shift right**: Moves the timeline left /right.
- **Center**: Adjusts the timeline position so the current time is at the center of the line.
- **Export video**: Opens a video export window. The video segment to export is defined by the positions of the Start marker (green bar) and End marker (red bar).
- **Open Legend**: Click to show the color coding of the timeline.](image)

**NOTE** Striped color codes (for Motion detected, DI triggered, or Sensor value events) appear over solid colored blocks. The thickness of the stripe(s) indicates the relative quantity of the events.

- **More actions**: Click to open a list of some timeline usage options.
- **Calendar**: Opens the calendar graphic. Select the year and month of the drop-down menus, then click the calendar day when recordings of interest were made. Selecting the day repositions the timeline to that date.

![Event triggered recordings filter](image)

**Event triggered recordings filter**

You can filter the content of the timeline for specific event types that triggered a recording. Click the triangle icon on the timeline near the camera name to open a popup menu, then click the box to enable (or disable) display of the recordings triggered by that event. In the following screen capture, the DI (data in) event triggered recordings are shown on a separate timeline below the camera they are associated with.
Additional options in the popup menu, such as device disconnected and device reconnected, are useful in analysis of the timeline and playback.

2.8.1 Playback recorded data

1. To play recorded video (see screen capture below):
   a. Click on the camera used to record the video you want to play back.
   b. Use the calendar menu to select the day on which the video was recorded.
   c. In a section of the timeline that shows recorded video (green segment, see below), click (once) the time at which you want to start playing video. The current play position is indicated by a white marker.
   d. Click the Play button (▶) in the playback controls to watch the video. Click the Pause icon (■) to stop.
   e. To mark a segment of the timeline for repeated playback (or export), drag your mouse cursor from the start of the segment to the end of the segment. The segment you selected will be indicated by a green marker at the start and a red marker at the end.
Click anywhere between the red marker and the green marker to set the play position, then click the play button to continuously replay the segment. Click the Pause icon (II) to stop.

### 2.8.2 Export video segment

1. To export the video segment between the green marker and the red marker:
   a. Stop the video playback.
   b. Set the Start marker and End marker positions for the segment of recorded video you want to export.
   c. Click the **Export video** icon.

d. If multiple cameras are listed in the pop-up window (see above), uncheck the cameras that you don’t want to download video from, then click **Browse** and select the location where the video segment will be saved on your computer.

   e. Click **OK** to export (download) the video segment. A window will open showing the progress of the download.
2.9 PTZ camera control

After adding a PTZ camera to the system, clicking the live video image from the camera activates the PTZ control panel. The control panel can be used to:

- Change the direction of the camera
- Zoom in, zoom out
- Recall preset setting (presets settings may include direction, zoom, focus, and iris)

The PTZ control panel normally appears in the lower-left corner of the web interface Video window.
SECTION 2: INSTALLATION AND SETUP

To manually change the direction of the camera up, right, down or left, click of the directional control ( ▲, ▼, ◀, ◁).

To Zoom in or zoom out, click the zoom control ( ±, ± ).

To move the camera to a preset setting, open the Recall Presets drop-down list, then click the identifier you want to use. When a preset is active, the preset identifier is shown in the “Recall Presets” select box.

2.10 Adding users to the system

1. After logging into the CMS as an administrator, click the Settings option in the header of the screen.

2. In the left pane, click Users.

3. Click the Create User button. In the Use Details menu, enter a Username, enter then re-enter a password (note that the password strength is calculated), then click a Permissions level (Admin, User, Custom).
SECTION 2: INSTALLATION AND SETUP

The **Admin** and **User** options have preset **User Permissions**, however, as an Admin you can change any permissions assigned to any user. Use **Custom** user permissions to enable / disable specific abilities for a user.

**User Layouts**

Pre-defined views can be assigned usernames with **Users** or **Custom** permissions. This feature can be used to assign different cameras and/or data to different users. To create views, see "2.7.4 Create Views" on page 28.

![Create User - User Permissions list](image)

4. After selecting the permissions for the new user, scroll to the bottom of the frame then open the **User Views** submenu.
5. Click a view in **Other users’ views** (right box), highlight the view(s) you want to assign to the user, then click the **Copy View** button (in the middle).

6. Click the **Apply** button.

7. Repeat this procedure for other login credentials you want to add to the CMS.

### 2.11 Firmware Upgrade

The firmware upgrade feature is not implemented for the SLS-ECMS series Central Management System at this time. For more information, please contact your product support organization.
SECTION 3
Settings Menu Reference

The Settings menu of the SLS-ECMS provides access to the administrative functions for NVRs added to it, and to the configuration of the CMS. The Settings menu is accessed by logging in as an administrator, then clicking the Settings option at the top of the window. The Settings menu tree is shown below. This section is provided as a reference to perform special functions.
3.1 Devices menu

The Devices menu enables you to add and delete devices to the system, and display and export the summary reports of those devices. The devices added to the system are listed under the Solstice heading in the left frame.

Devices can also be grouped under a heading and listed in a tree structure.

3.1.1 Device Status list

The Device Status list displays the current recording options for the device.

- In the Device Status list, you can click the entry in the address field to open the web page for the device in your default browser. If you use this feature, ensure that your default browser is compatible with the device.
- After selecting a device in the list, you can access a configuration submenu (tab) to change the Main configuration settings, Video configuration settings.

Main configuration submenu

The Main configuration submenu is shown below. In this menu, you can change the device name, IP address, run the initial device configuration setup, and change the network communication ports.
Video configuration submenu

In the Video configuration submenu you can manually start and stop recording (recording that is manually started must be manually stopped), and configure the camera for automatic recording.
SECTION 3: SETTINGS MENU REFERENCE

Authentication configuration submenu

In the Authentication configuration submenu you can username and password for the device.

3.1.2 Network Grid

Then Network Grid shows the network parameters for the devices listed. You can Export this data.

3.1.3 Authentication Grid

Then Authentication Grid shows the User names for the devices listed. You can opt to also View passwords and Export this data.
3.1.4 Device trees

Within the Devices list, Device Trees can be formed to organize devices into logical groups. These groups can then be selected to accessed and played together. Device trees appear as folders, and can have sub-folders. To create a tree (folder), click the **Edit device tree** icon in the header of the Devices menu.

Clicking the **Edit device tree** icon opens the **Device Tree Configuration** window shown below.
In the example shown above:

- The Create new tree icon was used to create a group that was then named **Tuesday Tree**.
- The LG LW130W object in the Source Tree frame was selected, then the Add to Edited Tree button was clicked.
- The tree was Saved.

In the Video window, device trees appear in the Device Groups frame, and cameras in the selected tree appear in the camera list. These cameras can then be accessed within the group to display live or recorded video, or status monitors.

### 3.2 Managed NVRs

The Managed NVRs screen is used to add NVRs to the CMS and perform basic configuration actions including:

- Main (see above)
- E-mail settings (setup email default values and automatic alert messages)
- Date and Time settings (sets current time, time zone and city, and time synchronization options)
- Storage (S.M.A.R.T. data monitoring and HDD testing)
- FTP (configures NVR for default server for backing up recordings)
- Remote Access (configures the network for remote connection (i.e., from the Internet) to the NVR)
- Shutdown/Ro Restart
- Factory Reset
3.3 Users menu

Users (usernames) can be created (and deleted) for the system with three different types of access: Admin, User and Custom. Admin (full access) and User (partial) access has a preset list of permissions. Custom access is used when a select set of permissions is given to a user.

Additionally, User and Custom access can be restricted to preset Views. For instance, a view that includes only cameras of the store front can be assigned to one user, and another user can be assigned only to view cameras inside a store.

By clicking the ▼ icons on the User Permissions and User Views lines, you can open submenus to select additional options. The following capture shows the permissions enabled for User access. Any change in this list will cause the Permissions access option change to Custom.

Similarly, by opening the User Views submenu, you can give access to selected “views” (created in the Views frame) to any user with User or Custom access.
Click **Apply** to save your settings.

### 3.4 Schedules menu

The Schedules menu includes two preset schedules, Always and Weekend, and allows you to modify these schedules and create new ones. Schedules can be used to time the performance of Actions. See **Settings | Actions | Create Action**.

In the window above, a new schedule, Work days, was created. It can be deleted or edited using controls on the screen. To change the day or time in the Period fields, hover over the field with the mouse to open a drop-down list from which you can select the option you prefer.
3.5 Action menu

In the Settings - Actions menu, you can create automatic and manual rules which execute a specified action or actions either within a certain time interval, or after manually pressing the button. For instance, you can create an automatic action that sends you an email when the free space on the HDD is less than a certain size, or create a manual action that starts recording a camera video when the button is clicked.

In the following window, an automatic Action is setup. The upper section of the setup menu defines the type of activation, and for Automatic (event) conditions, the Device, Event, and Schedule when it is performed. The lower section of the menu has two options: Action Editor (easy to use), and a Source Code editor. When the Source Code editor is used to modify the action, it cannot be changed with the Action editor.

NOTE: If you specify the conditions and actions in the Action Editor, then change it in the Source Code editor, you cannot return to the Action Editor to make additional changes.

Selecting Manual activation lists the Action on the Video screen Action Button panel. The action is initiated by clicking on the name of the action.
3.6 Configuration menu

The Configuration menu provides individual system Configuration Setup menus, a link to the Configuration Wizard, and some additional features.

3.6.1 Network menu

The Network menu allows you to make network configuration changes from within the web interface. Entries in the Network menu are identical to those in the initial configuration setup menu (step 5 of 7). See “2.4 Configuration Wizard utility” on page 17 above. After making changes, click **Apply**.

3.6.2 Email menu

The Email menu allows you to change your email settings from within the web interface. Entries in the Email menu are identical to those in the initial configuration setup menu (step 6 of 7). See “2.4 Configuration Wizard utility” on page 17 above. An additional option is provided to send a test email to confirm that your settings and the connection to your email server function as expected. After making changes, click **Apply**.
3.6.3 Date and Time menu

The Date and Time menu allows you to change the timestamp settings from within the web interface. Entries in the Date and Time menu are identical to those in the initial configuration setup menu (step 4 of 7). See “2.4 Configuration Wizard utility” on page 17 above. When using this menu, identify the time zone and city first, then change the Date and Time section as needed.

3.6.4 FTP menu

FTP makes possible direct access to recordings copied to that (FTP) server. FTP is disabled by default. An FTP server can function as the repository for video data downloaded (backed up) from the NVR.
SECTION 3: SETTINGS MENU REFERENCE

3.6.5 Storage display menu

On the Storage Info menu display, information about the type and status of the HDD(s) is shown. You can also display S.M.A.R.T. data and configure the disk(s).

- **Total capacity** - Total space available for storage of recordings.
- **Free space** - Actually usable space for storage of the recordings.
- **RAID type** - For the single-disk SLS-ECMS models, the word Single is displayed, for the multi-disk version, the type of RAID array is displayed.
- **RAID status** - **OK**: optimal condition. **Degraded**: some disks in the array are non-operational, but the array is still functional. **Failed**: multiple disks are non-operational to an extent that results in array failure, the data is lost.

**Storage Settings**

The NVR continuously monitors the free space on the disk. If space is low, it automatically deletes the oldest records until space is adequate again.

- The **Purge data older than ___ days** option can be used to maintain an adequate amount of free space.
- The **S.M.A.R.T.** option monitors the disk for errors, and can be used to predict a catastrophic failure before it occurs so that maintenance action can be performed. **S.M.A.R.T.** data can be displayed by clicking the **Show detail** hyperlink in the **Disks** list. Different HDD manufacturers may report different **S.M.A.R.T.** data parameters. The **S.M.A.R.T.** option is selected by default.

Confirm the settings by clicking the **Apply** button.
If you want to change a disk for any reason, first shutdown the SLS-ECMS, disconnect the power adapter, then replace the disk. After starting the SLS-ECMS, the system will open the Installation and Rescue mode menu through which you can configure the disk for use.

**Typical S.M.A.R.T. data report**
3.6.6 Configure Storage button

Clicking the Configure Storage button will restart the system and open the Storage Configuration utility.

3.6.7 Remote Access menu


3.6.8 Configuration Wizard

Opening the Configuration Wizard starts a 6-step setup program similar to the initial setup of your CMS. Refer to “SECTION 2 Installation and Setup” on page 3 for more information.

3.6.9 Customization menu

The CMS Customization menu is used to change the logo on the web interface, to enable a URL to open when you click the logo, set the light strip (band around the face of the Solstice NVRs) color and action.
3.7 System menu

The System menu allows you to perform several system-level functions including Shutdown, Restart, Factory Reset, open and export the System Log, and Backup/Restore the system.

3.7.1 Shutdown / Restart menu

To **Shutdown** or **Restart** the system, click the appropriate button, then follow the on-screen instructions.

If you shutdown your system, unplug the power to the system. To restart the system, reapply power.
3.7.2 Firmware Upgrade menu

The firmware upgrade feature is not implemented for the SLS-ECMS series Central Management System at this time. For more information, please contact your product support organization.

3.7.3 Factory Reset menu

Factory Reset will restart the system, then offer options to preserve network settings and preserve storage configuration (but data will be erased). All other system options and settings will be restored to the original factory defaults. The system will open again to the Configuration Wizard.

Select the options you prefer to preserve settings, then click Factory Reset. To bypass the factory reset, click Restart. Options are available to preserve network settings and storage configuration, but all other configurable options will return to the initial factory settings.

3.7.4 System Log menu

The System Log screen displays the record of the various messages for it generated by the CMS. You can export the system log file in an HTML or CSV format.
### 3.7.5 Backup / Restore menu

The Backup and Restore feature provides a way to retain current system settings, then reload them later if necessary. It is recommended that you backup your system settings after configuration changes are made.

#### Backup system configuration

To backup your system:

1. Click **Backup** in the window above. The following window will open.
2. Select a backup description for your backed up data.

3. Select the sections of the system you want to backup. By default, all sections are selected.

4. Click Backup, then follow the on-screen instructions to Save the file. By default, the backup file is named backup<YYYY-MM-DD>.xml and stored in your browser’s “downloads” directory.

   **NOTE** If you backup multiple Solstice NVRs from the same computer (to the same download directory), rename the file to associate with the NVR it represents.

**Restore system configuration**

1. Click the System menu Backup/Restore option shown on the screen below.
In the **Restore** screen above:

a. Click **Browse** to locate the backup file you want to upload. After selecting the file, wait until it uploads fully before continuing.

b. Uncheck the **Backup Data Sections** you **DO NOT** want to restore. After the upload, the sections checked represent the contents of the backup file.

c. Click **Restore**. A warning screen will appear. Click **Yes** to continue. A status window similar to the following will appear.

d. For each action in the screen, wait until the **State** indicates **Finished**, then click **Close**.
3.8 Preferences menu

3.8.1 User Preferences menu

The User Preferences menu enable you to reset the Language option, Format Preferences for Date, Time, Work start, and Temperature units, and Video Viewer settings. These options are similar to those presented in the Configuration Wizard. See “2.4 Configuration Wizard utility” on page 17 for more information.

3.8.2 Change Password menu

Use the Change Password menu to change the password (for the username) you used when you logged into the CMS. Enter the Current, New and Confirm (new) password, then click Apply.
SECTION 4
System / Remote Access

This section includes some general guidelines for accessing your CMS remotely, such as from a computer on the same LAN, or from the internet. Consider the following:

- Remote access to the SLS-ECMS based camera system requires configuration of router port forwarding of SLS-ECMS (two ports) and also for all connected devices (two ports per camera)
- Remote access should be configured after you configure the cameras and other devices in the system
- Automatic router control considerations:
  - SLS-ECMS tries to setup port forwarding automatically via UPnP Port Forwarding feature (preferred option)
  - Must be enabled in the router
  - Sometimes remote is not allowed due to security risks, or because the router is not capable of enabling this kind of remote access setup.

In general, there are two types of remote access to your system – each has its advantages:

- Access to cameras and other devices through the CMS, and
- Access to CMSs, NVRs, cameras, and other devices directly (recommended).

Advantages:

- Live video to client is re-streamed through CMS: high performance demand = high cost
- Simplified client design, number of clients limited by CMS
- Less channels per CMS
- Easier router setup

Advantages:

- Live view directly from device: less powerful NVR hardware needed = lower cost
- Number of clients limited by CMSs, NVRs, cameras
- UPnP Port Forwarding enabled router recommended
- Direct access to device configuration settings
4.1 Router setup guidelines

To enable the NVR to communicate with networks beyond a router, the router must be configured for Port Forwarding. For manual router setup:

- After selecting this method and confirmation, please “Download static tunnels info”. This link contains information about the port forwarding setup you need to apply to your router.
- Several ports required to configure on a router, so the router must have enough entries available in a Port Forwarding table.
- Router must support Network Address Port Translation (NAPT). I.E., they must be able to translate not only IP addresses, but also ports X:Y. For example: 95.47.107.164:60000 (WAN) -> 192.168.10.123:80

**NOTE**

Usually the SLS-ECMS will automatically determine whether the client is connecting locally or remotely and uses proper addressing. Sometimes (i.e. with VPN access) it may be difficult to detect automatically. Use the “Force local / remote access” option on login dialog screen.

4.2 NVR setup guidelines

The SLS-ECMS can be configured to connect to external networks even when it is located on a LAN separated from other networks by a router. Both the NVR and router must be configured to enable this feature. To configure the NVR for remote access, go to Settings - Configuration - Remote Access
In the menu **Settings - Remote access** menu, two options are provided:

- **Automatic setting of the router** - If your router supports control via UPnP protocol 4, the SLS-ECMS can set up the remote access automatically. With this option, the SLS-ECMS makes the cameras accessible dynamically when viewing live video using the SLS-ECMS.

- **Manual setting of the router** - If your router does not have UPnP protocol support, it is necessary to make access to the device from the Internet using static settings.

In the Preferred web port field, enter the number of the port through which the SLS-ECMS will be visible from the external network. If your router has an external address, e.g. 194.114.132.12, and the Preferred Web Port is set at 1024, then for access from the external network, enter the address http://194.114.132.12:1024 in the browser. The web port must be inside the range stated in the Port range fields.

If you use Manual router settings, the SLS-ECMS generates a table containing the values for manual entry into the web interface of the router. The table can be listed using the Download static tunnel information button.

<table>
<thead>
<tr>
<th>Device</th>
<th>IP address</th>
<th>Target port</th>
<th>Protocol</th>
<th>Port on gateway</th>
</tr>
</thead>
<tbody>
<tr>
<td>system</td>
<td>192.168.75.20</td>
<td>80</td>
<td>TCP</td>
<td>60000</td>
</tr>
<tr>
<td>system</td>
<td>192.168.75.20</td>
<td>1567</td>
<td>TCP</td>
<td>60003</td>
</tr>
<tr>
<td>a3s_n1072</td>
<td>192.168.75.76</td>
<td>80</td>
<td>TCP</td>
<td>60002</td>
</tr>
<tr>
<td>a3s_n1072</td>
<td>192.168.75.76</td>
<td>554</td>
<td>TCP</td>
<td>60001</td>
</tr>
</tbody>
</table>

**Example of a listing of static tunnels**

In the window shown above, columns are defined as follows:

- **Device** - device (camera) name, for which it is necessary to create a translated record.
- **IP address** - address of the target device to which the data should be sent in combination with the IP address that defines the destination of the data. On routers, this is often marked **Target port or To port**.
- **Protocol** - IP family protocol to be used. On the routers, it is often marked **Protocol**.
- **Gateway port** - port on the external side of the router, to which data from outside should be sent. This is a port in a given range, which is often marked on the router as the **Source port or From port**.
- **Timestamp** - time of last change of the settings. Check the SLS-ECMS network settings frequently. If a camera is added or the network settings or a camera are changed, the router must be setup to reflect the table containing the latest data.

From the external network, the device is accessible at the address in the format **public-address:port**. The data from this table must be entered in the settings **Port Forwarding or NAT** in the router.
APPENDIX A Status Monitor Definitions

The SLS-ECMS can display the current values of several variables in the system, cameras and sensors (e.g. fps, free disk space or temperature) in the individual cells. For this purpose, status monitors for the SLS-ECMS can be defined. These monitors can then be added to the view just like the live picture from the camera. You can create a status monitor in several ways:

- In the device group panel, switch from the current device tree to Status Monitors. Here, you can create, rename and delete status monitors.
  - Click the Add icon to add a new status monitor to an empty cell in the view just like the camera.
  - Switch to the device tree you want to use. By dragging and dropping the icons of the devices (from the device tree or Camera List Panel) above the cell containing the status monitor, you create a monitor for the device variables.

- You also create the status monitor by dragging and dropping the values from the device tree into a new cell. The status monitor can contain the variables of the SLS-ECMS and other devices, mainly cameras. The SLS-ECMS monitors the following variables:

**Table 1. System status monitor variables**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>totalSpace</td>
<td>Total disk space</td>
</tr>
<tr>
<td>freeSpace</td>
<td>Free disk space that can be used to store recordings</td>
</tr>
<tr>
<td>swapUsed</td>
<td>Number that expresses the saturation of the system swap space</td>
</tr>
<tr>
<td>swapTotal</td>
<td>Total swap space</td>
</tr>
<tr>
<td>sessionCount</td>
<td>Number of users currently connected to the SLS-ECMS web interface</td>
</tr>
<tr>
<td>averageLoad</td>
<td>Number that expresses the load of the SLS-ECMS</td>
</tr>
<tr>
<td>incomingTraffic</td>
<td>Data volume of all recordings being stored on the SLS-ECMS</td>
</tr>
<tr>
<td>outgoingTraffic</td>
<td>Volume of data flowing from the SLS-ECMS to other devices, excluding Live View data</td>
</tr>
</tbody>
</table>

**Table 2. Device status monitor variables***

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>connected</td>
<td>If the value is Yes, the camera is connected and working correctly. If the value is No, the camera is either unavailable (off, cable is disconnected), or the camera has not granted permission to the SLS-ECMS to access the view account (incorrect password).</td>
</tr>
<tr>
<td>recording</td>
<td>The value is Yes if the picture from this camera is being recorded by the SLS-ECMS. Otherwise, it is always No.</td>
</tr>
<tr>
<td>recording bps</td>
<td>Volume of data flowing from the camera to the SLS-ECMS. Includes only data stored on the disk – i.e. when the camera is not being recorded, the bps value = 0</td>
</tr>
<tr>
<td>recording fps</td>
<td>Number of frames per second recorded by the SLS-ECMS. The value is zero if the camera is not being recorded.</td>
</tr>
</tbody>
</table>

*NOTE: The variables listed exist for every camera. Other variables may exist of some devices.
APPENDIX B FAQ

Q I'm having issues with all/any cameras via remote access.
A Verify that the router is properly configured (cameras are directly accessible) and if enough bandwidth is available (upload).

Q What HDDs brands can be used, how many, what capacities, which RAID to should I use?
A Use Seagate, Western Digital, or Hitachi drives, SATA I or SATA II, RAID or enterprise grade. You can have one or two HDDs in the SLS-ECM, depending on the mode. The SLS-ECMS8 can hold 1 HDD, up to 3TB. The SLS-ECMS32 can hold 2 HDDS, up to 3TB each. Configure them for RAID 0, RAID 1 (requires 2 drives), or Linear recording.

Q What do I need to play videos downloaded from my SLS-ECMS
A We recommend VLC Player, which contains required CODECs to play video recordings.

Q Is it possible to connect a monitor directly to the SLS-ECMS?
A No. The SLS-ECMS is accessible from a computer and web browser that can connect to an NVR across a network.

Q Does SLS-ECMS have alarm inputs and/or outputs?
A No. But for scripting (Rules) purposes, you can use the digital inputs and outputs of the connected (supported) cameras or external I/O devices.

Q Why are there USB ports on my SLS-ECMS?
A The USB interface on SLS-ECMS is reserved for future use.
APPENDIX C  Solstice Mobile App for Android™

The Solstice Mobile App brings basic Solstice CMS and NVR features to your mobile phone and tablet. You can be in touch with your IP camera systems from anywhere across the Internet. You can control and view IP camera live streams from multiple Solstice NVRs, use predefined grid views and adjust them if necessary, use PTZ control or action buttons to control external devices, zoom in/out intuitively, etc. This app is free and available through Google play.

Features

- Adjustable or predefined IP camera grid views
- PTZ camera control (pan, tilt, zoom, preset positions)
- Action buttons to control external devices connected to Solstice (lights on/off, etc.)
- IP camera status information
- Automatic stream selection (automatically change resolution for current picture size)
- Access to multiple Solstice CMSs and NVRs
- Application secured by a password (unique encryption key is generated using READ PHONE STATE AND IDENTITY)

Sample screens:

4-camera landscape display
APPENDIX D  Solstice Mobile App for Apple® iPhone®, iPad®

This application brings basic Solstice CMS and NVR features to your mobile devices. You can control and view IP camera live stream from multiple Solstice NVRs, use predefined or adjust your IP camera grid view, use PTZ control or action buttons to control other external devices, zoom in/out intuitively etc. This app is designed for both iPhone and iPad. It is a free app available through the iTunes store.

Features

• Adjustable or predefined IP camera grid view
• PTZ control (pan, tilt, zoom)
• Preset positions
• Action buttons to control other external device (switch lights on/off and more)
• IP camera status information
• Automatic stream selection (automatically change resolution according to current picture size)
• Access to multiple Solstice CMSs and NVRs
• Intuitive zoom in/out

Compatibility

Compatible with iPhone 3GS, iPhone 4, iPhone 4S, iPhone 5, iPod touch (3rd generation), iPod touch (4th generation), iPod touch (5th generation) and iPad. Requires iOS 5.1 or later. This app is optimized for iPhone 5.

Screen shots (iPhone)

4-camera landscape display  Single camera display