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# Sentinel

## Cardiology Information Management

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# Communication Innovation

## Decades of Innovation

Del Mar Reynolds' rich history of innovation began nearly a half century ago with the development of Holter monitoring and analysis.

Now the Diagnostic Cardiology part of Spacelabs Healthcare, we are proud to continue this tradition of connecting innovation with care. Today we bring you Sentinel, a scalable Cardiology Information Management System integrating a comprehensive range of procedures.

## Sentinel offers Clinical value

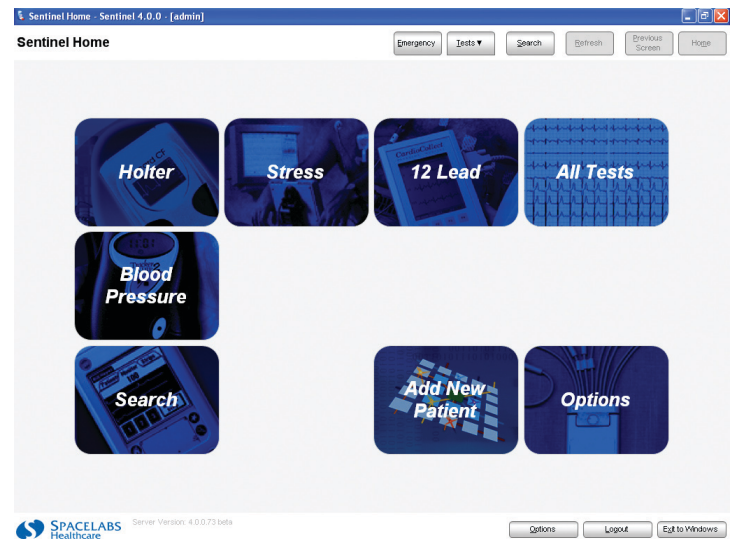
- Immediate access to historic ECG tests, supporting time-sensitive clinical interventions in emergency situations
- Automated entry of physician orders; automated test results
- Review and confirm patient tests utilizing an intuitive user interface
- Long-term storage of complete non-invasive diagnostic cardiology test results including Holter, 12-Lead, Stress, and ABP with immediate data retrieval
- Proven SQL database technology for enhanced reliability, and support of sophisticated multi-site operations

## Sentinel delivers IT advantages

- Integration into your HIS/EMR system through bidirectional HL7 messaging
- Automated ADT, physician order entry, test results, and billing
- All database access through HTTPS secure protocol (with appropriate certificate)
- Enhanced security - SQL technology, user profiles, and access control to help enable HIPAA compliant facility

## Sentinel makes Financial sense

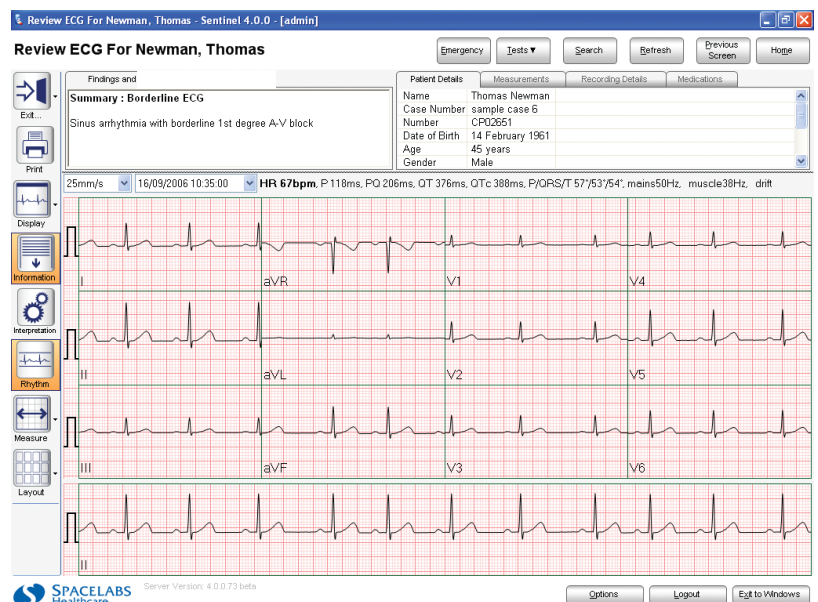
- Scalability - purchase what you need, nothing you don't
- A wide variety of system packages and pricing accommodates the specific needs of smaller cardiology practices as well as larger institutions
- Ability to integrate many generic 12-Lead ECG systems, protecting previous investment
- Ability to migrate legacy patient information and maintain in a single database



## Sentinel - at the Heart of Cardiology Information Management

### Information at your fingertips

The 12-Lead ECG viewer provides clear, high resolution online tracings with all the vital data available at a glance.



The ability to store patient details and recordings in a central, networked database also solves many cost and time-related issues:

- No lost paper records
- Time saved searching for patient details
- Improved workflow management

## Extended Functionality

Sentinel has been developed to allow you to work the way you want to, integrating our entire range of non-invasive diagnostic cardiology solutions:

- **ECG Stress Testing**
- **12-Lead ECG**
- **Holter Monitoring**
- **Ambulatory BP**

By putting you in control, Sentinel helps you coordinate your procedures more flexibly than ever before:

Whether entering patient details, downloading a Holter recording or reviewing an ECG Stress Test, Sentinel allows you to work with your department's day-to-day challenges with the utmost ease.

## Fully Integrated for Improved Workflow

Designed to integrate with your EMR/HIS system, Sentinel provides seamless connectivity of the patient record from admission through diagnosis, reporting and discharge.

Sentinel supports IHE-compliant HL7 protocol, widely adopted throughout the industry, that allows for many third party systems to be integrated.

Sentinel's configurable messaging system offers flexibility for future expansion. Its ability to handle data from multiple sources makes Sentinel a future-proof investment.

### Designed for your needs

Sentinel is designed to facilitate your workflow. The workscreens for each procedure enable you to follow a test from the initial order through to review and confirmation.

Toolbars provide quick access to the key areas and functions, allowing multiple operations to be performed at the same time.

Sentinel puts you in control of your workflow, securely, and with all the information you need at your fingertips.

## Sentinel Installation Requirements

### Single workstation or client installation

Operating system	Windows 2000, Windows XP Professional latest Microsoft patches applied
Ports	one USB port one Serial port
Processor	minimum Pentium 4 processor
RAM	minimum of 512 M Byte RAM. 2G Byte recommended
Disk Space	minimum 200 M Byte free disk space only for installation, recommended >20 G Byte free disk (Plus sufficient for data storage of recordings)
Display	resolution 1024 x 768 minimum, 1600 x 1200 recommended
Drive	CD ROM

### Server installation

Processor	>= 2.8GHz Intel Pentium (Xeon) CPU.
Hard Disks	3 x 250GB >10krpm SATA Hard Drives (RAID-5 data array)
Minimum	2 x 250GB >10krpm SATA Hard Drives (RAID-1 system array)
RAM Memory (Minimum)	>= 4GB ECC RAM
Drive	CD ROM
Operating System (Minimum)	Microsoft Server Operating System Software
Data Back-Up Solution	SCSI controller (for tape drive) – Backup advised Full Daily capacity to perform a “Full Backup” of required “Data” to a single Tape
Tape-Drive	
Network	100/1000 Ethernet Adapter
Database	SQL Server

## Customized Installation Solutions

Sentinel can be used in a variety of clinical settings. Each installation can be tailored to your specific needs or can be installed straight from the box in almost every clinical and data integration environment.

To learn more about Sentinel, or our full range of non-invasive diagnostic cardiology products, please contact your sales representative or our offices listed below.

### Integration Engine - Technical Summary

Transport - *TCIP or file-based operation*

Process type - *Windows Service*

Lower Layer protocols - *Minimal Lower Layer Protocol (MLLP) with configurable delimiters*

Direction of data transfer - *Bidirectional*

Target OS - *Windows Server 2003, WinXP*

Security - *Authenticated connection between the Messaging Service and the Sentinel database*

Logging - *Service start/stop, error conditions and message received events logged to custom windows event log. Logging of incoming or outgoing messages in a configurable location within the local file system.*

### HL7 Summary

Versions supported - *v2.1 – v2.5*

Incoming - *patient demographics and administration via ADT feed*

Outgoing - *ORU R01 with embedded PDF or UNC path to a PDF*

Acknowledgements - *Original Mode only*

Case/Visit Numbers - *are extracted from any incoming message that contains a value in the PVI-19 field*

IHE Compliance - *Sentinel implements two IHE actors:*

Report Creator CARD.DRPT.RC

Information Source CARD.RED.InfoSrc



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Spacelabs Healthcare, Inc.  
5150 220th Ave. SE, Issaquah, WA 98029  
PO Box 7018, Issaquah, WA 98027-7018  
t 425 657 7200 f 425 657 7212  
www.spacelabshealthcare.com

Spacelabs Healthcare Ltd  
1 Harforde Court, John Tate Road  
Hertford, SG13 7NW United Kingdom  
t +44 1992 507700 f +44 1992 501213

