

# REAL-TIME CCTV PATIENT MONITORING HIGH-ASSURANCE ENCRYPTION

## CASE STUDY

Application of High-Assurance Network Encryption	
<b>Sector:</b>	Healthcare
<b>Use Case:</b>	CCTV, real-time monitoring
<b>Solution:</b>	Secure patient management and CCTV monitoring across Layer 2 network architecture

# US veteran affairs hospital implements Senetas high-assurance encryption to secure real-time CCTV patient monitoring system.

## CUSTOMER CHALLENGE CCTV SECURITY AND PRIVACY

AvaSure, a division of AvaSure Holdings, Inc., developed AvaSys; an advanced, CCTV-based patient monitoring and communications e-health initiative.

The AvaSys platform enables nursing staff to remotely monitor multiple patients in multiple locations. It enables increased staff productivity and cost reductions, whilst increasing the quality of patient monitoring and care.

The CCTV transmitted data within the AvaSys solution needs to be protected from a range of data network risks. Key considerations for systems performance and security include:

- >> Maintain 100% video quality and real-time monitoring
- >> Address patient privacy concerns
- >> Avoid breaches of health-care regulatory requirements
- >> Prevent disruption of CCTV data
- >> Prevent input of rogue data
- >> Comply with FIPS 140-2 Level 3 data security standards

In addition to these considerations, the chosen data network encryption solutions needed to meet three specific criteria to ensure the AvaSys solution's optimum performance.

1. Near-zero CCTV latency – because the CCTV solution is monitoring patients in real-time, there must be a minimal delay in the CCTV feed.
2. Minimum encryption bandwidth overhead – CCTV requires maximum network bandwidth and the encryption solution must not add overhead to bandwidth use.
3. Consistent and dependable CCTV data flows – CCTV requires consistent data flows to maximise video image quality.

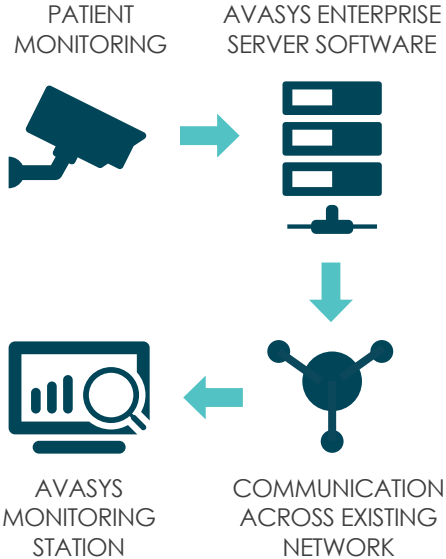


Figure 1: AvaSys Solution Overview

## SENETAS SOLUTION HIGH-ASSURANCE NETWORK DATA PROTECTION

Senetas high-assurance encryptors offered the AvaSys solution maximum CCTV network data protection and consistent network performance without degrading the AvaSys CCTV network's performance.

Senetas certified CN4010 encryptors (FIPS 140-2 Level 3) were chosen to secure the AvaSys CCTV solution as they provided the optimal mix of performance, features and cost-effectiveness.

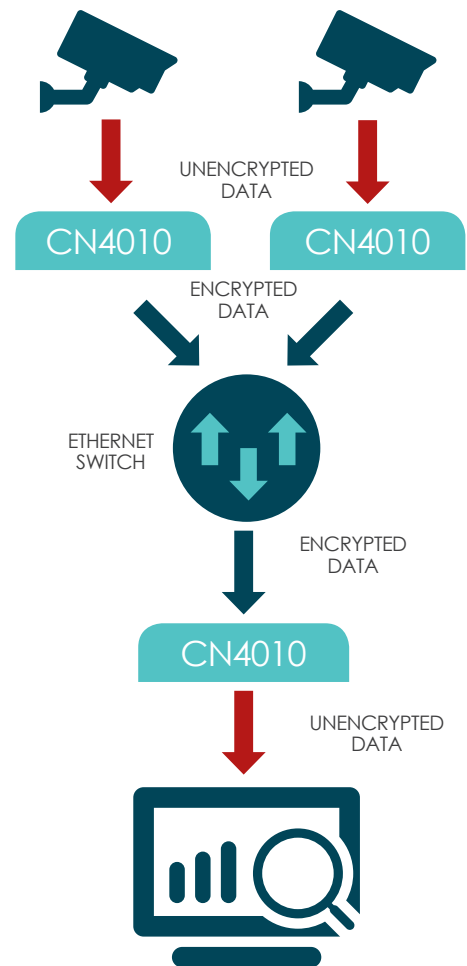
Physically, the CN4010 encryptor offers a compact and light-weight form-factor. It delivers dependable, near-zero latency with no data overhead – ensuring a cost effective e-Health solution.

The AvaSys solution includes a Senetas CN4010 encryptor in each room; wired to a video camera and then back to the core Cisco 3750 switch. A Senetas hub encryptor is located on the monitoring side, connecting to all cameras via the switch.

Video capture is provided by an Axis P5512 (H.264/MPEG) camera; featuring pan/ tilt/zoom, a digital two-way audio speaker, microphone, LED lights, chime and infrared light for low-light viewing.

The AvaSys monitoring and care solution is available as a fixed or mobile installation, with both wireless and wired Ethernet connectivity. The mobile wired solution was used during proof of concept.

The AvaSys server and monitoring station software are supported on standard Windows operating systems and use either physical or virtual servers. The system uses standard Internet Protocol (IP) networking infrastructure.



The AvaSys 'Interview Client' is the system's central monitoring station and the heart of the solution.

Each Interview Client will monitor up to 15 rooms simultaneously with one-way video and two-way audio.

The Interview Client has flexible screen configurations (a single room view, two rows of two, three rows of three, etc.) and may be operated on a dual or multi-monitor system.

## **BUSINESS BENEFITS**

### **SECURE CCTV NETWORK TRANSMITTED HEALTHCARE DATA**

The complete patient monitoring and care solution – the AvaSys CCTV system and the Senetas certified CN4010 encryptors – provides full wire speed (line rate) network performance and FIPS (140-2 Level 3) certified encryption at speeds from 10Mbps to 1Gbps, without additional bandwidth overheads.

During proof of concept, in day-to-day use, the Senetas-protected AvaSys solution operated with maximum data security and maximum network performance.

The Senetas CN4010 certified encryption solution also provides the latency sensitive AvaSys CCTV platform with maximum costs efficiencies of a truly scalable security solution.

With a scalable wire speed from 10Mbps to 1Gbps, the customer need only pay for the wire speed performance it requires now. The CN4010 will scale upwards as the customer's needs change over time.

The deployment also demonstrated the simplicity of Senetas CN encryptors 'set and forget' implementation and on-going management.

Their simplicity begins with connection to the network, followed by activation of Senetas CM7 encryptor management software and finishes with self-configuration and data encryption.

The Senetas CM7 management software is an advanced, intuitive and easy to use application for remote and local diagnostic and encryptor operations.

Due to the successful proof of concept, AvaSure chose to implement the FIPS certified secure AvaSys patient monitoring and care CCTV solution throughout all US Veteran Affairs Hospitals.

## SENETAS CORPORATION LIMITED

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Senetas manufactures high-assurance Layer 2 Metro Area and Carrier Ethernet network encryptors. They support all Layer 2 protocols and topologies.

Our multi-certified encryptors are used by some of the world's most secure organisations, including governments and defence forces; commercial and industrial enterprises; Cloud, data centre and telecommunications service providers in more than 30 countries.

## GLOBAL SUPPORT AND DISTRIBUTION

Senetas CN series encryptors are supported and distributed globally by Gemalto under its SafeNet encryption brand.

Gemalto also provides pre-sales technical support to hundreds of accredited partners around the world; including systems integrators, networks providers, cloud and data centre service providers, telecommunications companies and network security specialists.

For more information click [here](#).

## TALK TO SENETAS OR OUR PARTNERS

Senetas and Gemalto also work with customers' existing data network service providers, systems integrators and information security specialists to specify the optimal high-assurance encryption solution for their needs.

Wherever you are, simply contact Gemalto or Senetas to discuss your needs. Or, if you prefer, your service provider may contact Gemalto or Senetas on your behalf.

## HIGH-ASSURANCE NETWORK ENCRYPTION

Whatever your Layer 2 Ethernet network security needs, Senetas has a high-assurance solution to suit. They support modest 10Mbps to high-speed 10Gbps links and multi-port 10x10Gbps links.

Scalable, agile and easy to use; Senetas high-assurance encryptors provide maximum security without compromising network performance.