Cisco HealthPresence
Solution Design Guide Addendum

Cisco HealthPresence Version 2.0 Addendum for Neurosynaptic Telemedicine Medical Devices
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CHAPTER 1

Design Considerations for Systems Using Neurosynaptic Medical Devices

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Objectives and Audience

This addendum describes the design considerations specific to an enterprise using the Neurosynaptic medical devices[1]. This addendum must be used in conjunction with the Cisco HealthPresence™ Solution Design Guide, which provides an overview of the features and functions of Cisco HealthPresence and describes the options and best practices for designing a Cisco HealthPresence implementation, including:

- selecting a deployment model
- choosing the features you want to use
- designing the video conferencing portion of the solution
- determining bandwidth requirements and implementing quality of service
- determining security requirements and defining your security policy
- designing a Cisco HealthPresence room
- selecting Cisco service options

Almost all of the content of the Cisco HealthPresence Solution Design Guide applies to any implementation, regardless of the medical devices. This addendum covers the differences, which includes the devices supported, a minor security difference and a minor bandwidth difference. The target audience is Cisco HealthPresence solution planners and designers for a medical facility that plans to use Neurosynaptic medical devices.

Cisco HealthPresence Intended Uses

The Cisco HealthPresence Device consists of Attendant and Provider endpoints running the Cisco HealthPresence-Connect software.

1. Neurosynaptic devices are not approved for use in the United States and several other countries. For a list of countries where these devices are available for use, contact Neurosynaptic Communications Pvt. Ltd.

The Cisco HealthPresence Enterprise Server at a data center provides a communications link between HealthPresence endpoints over private or virtual private network connections having securement. Utilizing the network connections with securement, the Cisco HealthPresence-Connect software transmits data acquired from third-party medical devices at an Attendant endpoint to Provider endpoints located at remote facilities.

Compatible Third Party Devices include medical devices from AMD Telemedicine (covered in the Cisco HealthPresence Solution Design Guide) and the following medical devices from Neurosynaptic:

- ReMeDi ECG Probe (ReMeDi-ECGCAB-001)
- ReMeDi Temperature Probe (ReMeDi-TEMPCAB-001)
- ReMeDi Stethoscope Probe, (ReMeDi-STETHCAB-001)
- ReMeDi NiBP Probe, (ReMeDi-BPCAB-001)

The medical devices attach to the ReMeDi Medical Data Acquisition Unit (ReMeDi-MDAU), which in turn connects to the Cisco HealthPresence Attendant Appliance.

Additional network connections with securement, separate from those used to transmit the data from medical devices, provide video conferencing capabilities between an Attendant and a Provider endpoint.

The Cisco HealthPresence Connect software transmits data from a Cisco HealthPresence Attendant Appliance to a Cisco HealthPresence Provider Appliance, according to the intended uses of the third party medical devices.

Note The Cisco HealthPresence-Connect software is not intended to perform real-time, active, or online patient monitoring, and does not transmit or display any real-time data that is intended to alert a physician of alarms or other conditions that require a physician's immediate action or response.

The user’s infrastructure must meet the basic minimum specified requirements for Cisco HealthPresence to perform as intended. This includes, but is not limited to:

- adequate bandwidth
- appropriate video call control and routing equipment
- appropriate capacity routing and switching equipment
- proper software levels
- correct room design
- adequate physical and network security

Design Considerations When Using Neurosynaptic Medical Devices

The capabilities, components and architecture of the Cisco HealthPresence solution are the same regardless of which medical devices are attached to it; however, the attached medical devices determine the content that can be shared during an appointment and the tabs that appear in both the Provider and the Attendant screens. In the case of Neurosynaptic, that content is vitals data, ECG information and stethoscopic audio.

Cisco HealthPresence-Supported Medical Devices and Peripherals

Cisco HealthPresence is interoperable with both AMD Telemedicine[2] and Neurosynaptic devices[3]. Cisco HealthPresence also supports the Hi-Tech E-Pen (not a medical device) to enable electronic prescriptions.

The specific Neurosynaptic medical devices that are supported are described next.

Neurosynaptic Devices

In some countries outside of the United States, Cisco HealthPresence supports the Neurosynaptic Multi-parameter Data Acquisition Unit, referred to as NS MDAU. This device, shown in Figure 1-1, provides the following measurements: 12-channel ECG, NiBP, Auscultation Sounds (Stethoscope), temperature and heart rate.

Figure 1-1 Neurosynaptic Multi-parameter Data Acquisition Unit

Bandwidth Requirements

Video Endpoint Bandwidth

The bandwidth for video endpoints is the same regardless of the medical devices attached to the Cisco HealthPresence Appliance. Refer to the Cisco HealthPresence Solution Design Guide for this information.

Medical Device Bandwidth

The Neurosynaptic medical devices require a minimum of 96Kbps and up to 191Kbps if all medical devices are transmitting concurrently. The breakdown of bandwidth is:

- ECG: 96 Kbps
- Stethoscope: 64 Kbps
- Temperature: 8 Kbps

2. AMD devices are not covered in this addendum.

3. Neurosynaptic devices are not supported in the United States.

- Blood Pressure: 8 Kbps
- Pulse Oximeter: 4.8 Kbps

Security

With the Neurosynaptic Device Aggregator the audio stream is transmitted via TCP and is not encrypted. This audio stream cannot be associated with a patient and all patient data is encrypted.