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Application Note: Secure VTC Using Cisco ISDN Link Gateway

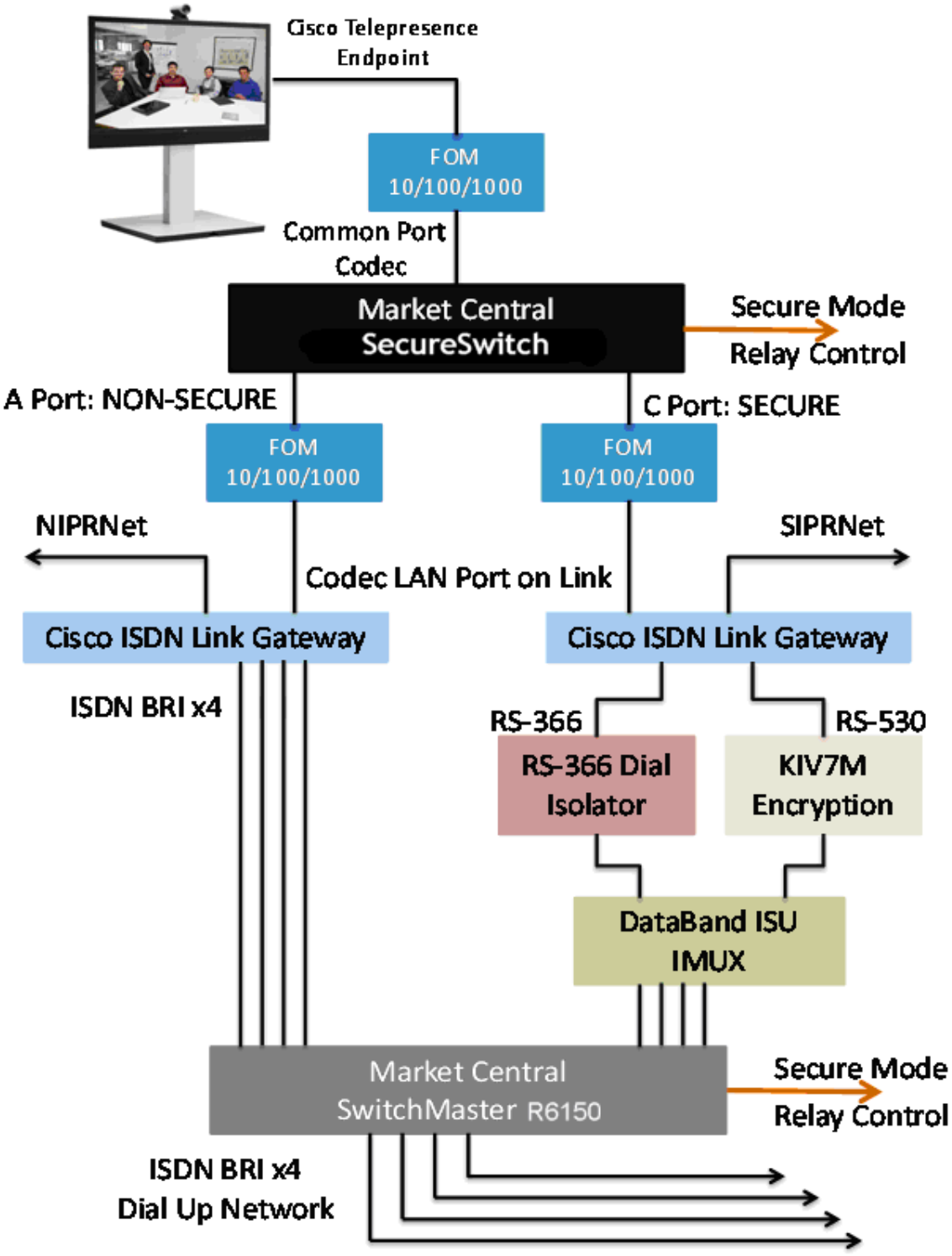
Market Central® extends its industry leading SecureSwitch® capability from IP only to enable ISDN calls with the addition of the SwitchMaster® Model 4xBRI. This application note provides an overview for enabling the Cisco C-Series codec to switch between secure and non-secure ISDN calls using one set of BRI lines on a call by call basis. This enhancement leverages the base architecture for secure IP switching provided by the DISA DVS Approved and TEMPEST Evaluated SecureSwitch optical switches and incorporates the new Cisco Link Gateway product which was recently added to the DISA JITC APL and approved for use on DoD networks.

While videoconferencing has rapidly transitioned to using IP networks for the preferred communication path, there are still requirements in the Department of Defense to support ISDN dial up with Type 1 encryption (KIV7M, KIV19M, etc.). In late 2012 Cisco had several product changes that impact the options for new systems and the upgrade path for existing users of dual network codecs (Cisco 3000MXP & 6000MXP). The DISA JITC APL listings have expired for the Cisco 3000MXP and 6000MXP codecs and they were removed from the APL in 2012. While users can continue to operate their previously installed and approved MXP codecs on DISA networks, no new codecs will be approved for connection and a codec currently on the DISA JITC APL must be purchased.The current family of Cisco codecs on the DISA JITC APL does not support native connections to ISDN or serial networks (RS-530) for secure dial up videoconferencing. This includes the C-Series, EX, MX, and SX series codecs. To enable these IP only codecs Cisco released the Telepresence ISDN Link, which is a single user Gateway to enable one codec to support ISDN or IP conferencing on a call by call basis. The ISDN Link gateway was tested and approved by DISA JITC and may be found on the current APL listing.

While the basic capability to support ISDN or Serial network connections has been added with the Cisco ISDN Link Gateway this does not address the DOD requirement to enable a single endpoint to switch between security levels on a call by call basis using a single ISDN phone number. The Market Central SwitchMaster switch has been released in a configuration to support switching 4 BRI ISDN circuits between two Cisco ISDN Link units to automate this for customers who desire secure switching on a call by call basis. The following illustration provides a representative configuration to comply with DISA security requirements when architecting a single codec to support calls over ISDN and IP and simplify the user operation of the systems.

Note that the programming requirements of the CODEC and the ISDN link products require significant expertise that is beyond the scope of this white paper.

Figure 1 – Reference architecture: Cisco Telepresence ISDN Link Gateway supports secure switching using ISDN and IP networks



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Secure mode control for switching is performed using external relays for contact closure to select the desired classification. The SecureSwitch and SwitchMaster are remotely controlled and this can be done using the local AMX or Crestron room control system or a simple mechanical switch. Please consult with one of Market Central's application engineers for more details on switching and configuration options.

If you are upgrading an existing system which has an encryption rack, dial isolator, IMUX, and cables, these can be reused with the ISDN Link Gateway as shown. For new installations, these must be purchased in addition to the Market Central SecureSwitch and SwitchMaster. The Transition Network DataBand ISU IMUX is available from Tech Data as a direct replacement for the discontinued Adtran 512 IMUX. The DataBand is available in U or ST configurations.

In the reference architecture (Figure 1) 10/100/1000MB Fiber Optic Media converters ("FOMs") are recommended to support Gigabit LAN speeds for maximum video quality. A mode indication sign is not shown; however it can be added and managed by the local room controller.

Please contact Market Central to answer your secure ISDN switching questions, provide SwitchMaster pricing, and quote lead times for delivery.