



EQUIPMENT GUIDELINES

DoIT is replacing its current voice system and applications with a state-of-the-art IP-based voice solution on a converged voice and data network environment using MNT. Through the RFP process, a contract was awarded to ISC, Inc. to implement an all Cisco infrastructure on the LAN and WAN. This solution includes building a highly reliable enterprise network capable of unified communications services delivery.

In order to deliver, manage, secure and support this new network and to ensure future integration, it is highly desirable that agencies needing to purchase equipment prior to their impending implementation consider the following list of guidelines. All of the equipment is approved as 'CICN Project Compliant' and can be purchased through the DoIT contract with ISC. This contract allows all state agencies to take advantage of the substantial discounts being offered as well as to consult directly with ISC regarding their unique situations. Cisco Systems is also available to assist you with determining the most appropriate products from the list below to best build your data network in support of future CICN integration.

To ensure system and network integrity, guaranteed acceptable service delivery, manageability, support and overall integration for the CICN, all equipment referenced is from manufacturer CISCO SYSTEMS, INC. unless otherwise noted or approved by exception.

Equipment	Required Functionality	Examples
LAN Switches	Integrated Security Features: Port Security DHCP Snooping Dynamic ARP Inspection IP Source Guard Private VLANs Spanning Tree Root Guard Spanning Tree BPDU Guard SmartPorts Power Over Ethernet Features: Intelligent Power Management (ability to automatically apply only the necessary amount of power to the connected device on a per-port basis). 802.3af Power Standard QoS Features Auto VLAN Auto QoS Multiple Queues per port Modular QoS – Priority Queuing Control Plane Policing	http://www.cisco.com/en/US/products/hw/switches/index.html Stackable/Closet Switches: <ul style="list-style-type: none"> • Catalyst 3560 series with integrated power over ethernet • Catalyst 3750 series with integrated power over ethernet Chassis/MDF/Closet Switches: <ul style="list-style-type: none"> • Catalyst 4500 series with integrated power over ethernet • Catalyst 6500 series with integrated power over ethernet

<i>Equipment</i>	<i>Required Functionality</i>	<i>Examples</i>
	<p>Hardware Rate Limiters</p> <p>Management Features</p> <ul style="list-style-type: none"> **Time Domain Reflectometry (TDR) functionality Netflow Integration into emergency responder e911 solution for Unified Communications and e911 support for mobile IP handsets **Support for Cisco UC Operations Manager / Service monitoring Support for proactive IP SLA testing functionality <p>High Availability features (Layer 2 and Layer 3 Optimization features)</p> <ul style="list-style-type: none"> **Non Stop Forwarding (NSF and NSF Aware) – work for L3 convergence **FlexLink – allows for L2 redundant link HA without the use of STP **Scalable Control of Routing Protocols (OSPF, EIGRP) for sub-second L3 convergence **Multicast Subsecond Convergence – critical for Voice and Video applications **Gateway Load Balancing Protocol (GLPB) -> next gen HSRP / VRRP <p>** = Data center chassis switches</p>	
Routers and Voice Gateways	<p>Modular QoS – Low Latency Queuing</p> <p>Integrated DSP resources for media termination, conferencing, and transcoding</p> <p>Built in AES hardware encryption engines</p> <p>Optimized Edge Routing</p> <p>Survivable Remote Site Telephony support (SRST)</p> <p>MGCP, H.323 and SIP compliant</p> <p>Unified Border Element (Session Border Controller / IP to IP Gateway functionality for IP centric interconnects between the Enterprise and Service Providers)</p> <p>Ability to support Land Mobile Radio integration – i.e IPICS</p> <p>All in one solution for Secure Voice, encrypted and authenticated phone calls and ad-hoc conference calls</p> <p>Internet Low Bit Rate Codec (iLBC) support</p>	<p>http://www.cisco.com/en/US/products/hw/routers/products_promotion0900aecd8017150a.html</p> <p>Integrated Services Routers (ISR)</p> <ul style="list-style-type: none"> • Model 28xx • Model 38xx <p>Analog end-point Gateways</p> <ul style="list-style-type: none"> • Model VG224 <p>http://www.cisco.com/en/US/products/hw/gatecont/ps2250/ps5627/index.html</p>
Wireless LAN	<p>Centralized Management Capability</p> <p>Management ability to integrate rogue Access Point detection</p> <p>Integration of rogue AP detection with Cisco switches CAM table</p> <p>Management Integrated location identification services</p> <p>Integrated guest access portal</p> <p>Integrated signal strength testing model</p> <p>Full VoIP support</p> <p>Support of both Lite weight Access Point controller model and Intelligent Access Point model from same manufacturer</p> <p>Multiple models of controllers offered (6 user to 300 user)</p> <p>Integrated router wireless controller module capability</p> <p>Integrated core switch wireless controller module capability</p>	<p>http://www.cisco.com/en/US/products/hw/wireless/index.html</p> <p>WLAN Access Points</p> <ul style="list-style-type: none"> • 1130 series (indoor AP) • 1240 series (indoor/outdoor AP) • 1300 series (AP and pt-to-pt Bridge) • 1400 series (pt-to-pt Bridge) • 1500 series (outdoor mesh AP and Bridge) <p>WLAN Controllers</p>

<i>Equipment</i>	<i>Required Functionality</i>	<i>Examples</i>
	<p>Integrated edge switch wireless controller capability Integration with same manufacturer NAC solution 802.11a,b,g support in single Access Point Combined client access and bridge functionality option in single AP Full CCX compliance per AP RFID capability with single AP Ability of AP survivability in lite weight mode w/o controller connectivity Outdoor MESH wireless option from same manufacturer Outdoor MESH solution manageable under same management package Multiple VLAN capability per AP QoS and Traffic Prioritization capabilities per AP N+1 redundancy of lite weight model Automatic load balancing between Aps Automatic failover to 2nd controller</p>	<ul style="list-style-type: none"> • 2100 series • 4400 series <p>WLAN Management</p> <ul style="list-style-type: none"> • Wireless Control System • Wireless Location Appliance
Network Security	<p>Stateful Firewall capabilities integrated into the router/voice gateway. Passive Intrusion Detection and Proactive Intrusion Prevention Integrated into router/gateway. Centralized Security Management for a Router Security and ACL Management A single common system for Security Information Management that supports all LAN and WAN infrastructure in the CICN The ability to have network awareness and topographical views to proactively mitigate potential security incidents Mitigation options to include distributing IPS signatures to the router/voice gateway Ability for Security Monitoring System to enact "set port disable" at the LAN Switch Behavioral Protection integrated into the Infrastructure must be used for event correlation, support QOS marking, and integrate into NAC for posture assessment. Intrusion Detection / Prevention must integrate with Wireless Controllers to block known malicious users. Intrusion Detection / Prevention must provide rate limiting options at the router or switch based on the alert The Security Information Management System for event correlation and mitigation must integrate with the system used for management of all devices.</p>	<p>http://www.cisco.com/en/US/products/hw/vpn/devc/index.html</p> <p>Firewalls:</p> <ul style="list-style-type: none"> • Adaptive Security Appliance (ASA) http://www.cisco.com/en/US/products/ps6120/index.html <p>VPN:</p> <ul style="list-style-type: none"> • Adaptive Security Appliance (ASA) http://www.cisco.com/en/US/products/ps6120/index.html <p>Network Admission Control:</p> <ul style="list-style-type: none"> • Clean Access http://www.cisco.com/en/US/products/ps6128/index.html <p>Radius Authentication:</p> <ul style="list-style-type: none"> • Access Control Server (ACS) http://www.cisco.com/en/US/products/sw/secursw/ps2086/index.html <p>Ironport email and web Security: http://www.ironport.com/products/</p> <p>Network Intrusion Detection:</p> <ul style="list-style-type: none"> • Adaptive Security Appliance (ASA)

<i>Equipment</i>	<i>Required Functionality</i>	<i>Examples</i>
		<p>http://www.cisco.com/en/US/products/ps6120/index.html</p> <ul style="list-style-type: none"> IPS 4200 Series Sensors http://www.cisco.com/en/US/products/hw/vpndevc/ps4077/index.html <p>Host Intrusion Detection:</p> <ul style="list-style-type: none"> Security Agent http://www.cisco.com/en/US/products/sw/secursw/ps5057/index.html <p>Security Syslog Monitoring and Reporting:</p> <ul style="list-style-type: none"> Monitoring Analysis and Reporting System http://www.cisco.com/en/US/products/ps6241/index.html
VoIP Unified Communications	<p>iLBC and G.722 Wideband Audio Codec support</p> <p>Native SIP line side and trunk side support with full end user / administrator functionality</p> <p>Native desktop and room based Video support integrated with end user telephony features, such as ad-hoc conferencing.</p> <p>Native ability to integrate into existing H.323/SIP endpoints</p> <p>H.323/SIP endpoint camera support into the overall dial plan</p> <p>Security – Digital Certificate support on the phones</p> <p>Integrated clients available for specified cell phones showing presence, voicemail and secure text messaging information.</p> <p>Single Number Reach native to core call control support</p> <p>Must have Microsoft integration capabilities</p>	<p>http://www.cisco.com/en/US/netsol/ns151/net_working_solutions_products_generic_content/0900aecd804aca89.html</p> <p>Call Control</p> <ul style="list-style-type: none"> Communications Manager http://www.cisco.com/en/US/products/sw/voicesw/ps556/index.html <p>IP Endpoints</p> <ul style="list-style-type: none"> 7900 Series IP Phones http://www.cisco.com/en/US/products/hw/phones/ps379/index.html