



VESTA[®] 9-1-1

PRODUCT GUIDE

RELEASE 7.2 SERVICE PACK 1
MAY 2019

833954-00108

User Information

Using third-party products

Vesta Solutions does not support other Windows applications or utilities with its products. If you are planning to implement or integrate third-party products with the product, please contact Vesta Solutions Technical Services Team. To maintain your support agreement and system warranties, third-party integration and co-habitation requires Vesta Solutions authorization and also may require a fee-based certification effort.

Caring for the environment by recycling

This symbol on a Vesta Solutions product means the product should not be disposed of with household or business waste.



Disposal of your Vesta Solutions electrical accessories

Do not dispose of Vesta Solutions electrical accessories, such as jackboxes or gateways, with household or business waste. In some countries or regions, collection systems have been set up to handle waste electrical and electronic items. Contact your regional authorities for more details. If no suitable scheme exists, you may return the unwanted electrical accessories to any Vesta Solutions-approved service center in your region.

Copyright

© 2012-2019 Vesta Solutions, Inc., a wholly owned subsidiary of Motorola Solutions, Inc. All rights reserved.

This document is protected by copyright law and international treaties, and is the CONFIDENTIAL AND PROPRIETARY information of Vesta Solutions, Inc. All trademarks, service marks, product names, brands, company names and logos appearing in this document are the property of their respective owners. VESTA® is a registered trademark of Vesta Solutions, Inc.

Page intentionally left blank

Change History

Change	Location
New tabs Connected Car and Waze for Enhanced Data window.	Chapter 3: "Console Features"
Agencies can be configured with a maximum of four CDR profiles.	Chapter 5: "Analysis and Reporting"

Page intentionally left blank

Contents

Chapter 1 About the Product Guide

Intended audience.....	14
Terminology.....	14
Related documents.....	14

Chapter 2 Product Overview

What is VESTA 9-1-1?.....	18
Call taking.....	18
Telephony.....	18
Call data processing.....	19
System management.....	19
NG9-1-1 support.....	20
Text calls.....	22
Component types.....	23
System Virtualization.....	24
Upgrades to VESTA 9-1-1 Release 7.2 Service Pack 1.....	25
Deployment options.....	26
Single-site centralized architecture.....	27
Dual-site distributed architecture.....	28
Multi-site centralized architecture.....	29
Multi-site distributed architecture.....	29
VESTA Core.....	30
VESTA Essentials.....	31
Local survivability support.....	32
Enhanced IP phones.....	33
Enhanced Soft Phone.....	37

Chapter 3 Console Features

Console features overview.....	40
Console workspace.....	40
Console layouts	42
Layout management.....	46
Console shortcuts	47
Containers.....	50
Voice call appearances.....	52
Personal Call Appearance.....	55
In Calls Appearance.....	58
Shared Call Appearance.....	60

Multiple Call Appearance and Multi Calls button.....	63
Call information.....	64
Call Information Display window.....	65
Enhanced Data.....	69
Voice call taking features.....	75
Answer.....	75
Blind Transfer – Supervised.....	75
Blind Transfer – Unsupervised.....	75
Conference.....	76
Drop All.....	76
Drop Last.....	76
End PCP.....	77
Flash.....	77
Join.....	78
Local Hold.....	79
Move to PCA.....	80
Network Conference.....	81
Network Drop Last.....	81
No Hold Conference.....	82
Pickup.....	82
Release.....	82
Retrieve local call.....	83
Retrieve.....	83
System Hold.....	83
Transfer.....	84
Text call features.....	84
Text Calls window.....	84
Text Conversations window.....	85
Text Multiple Call Appearances.....	87
Call distribution features.....	88
Refuse.....	88
Console ACD Readiness.....	88
Queue Display window	92
Automatic Abandoned Call Distribution.....	94
Dialing features.....	95
Dial Pad.....	95
Dial Directory.....	95
Contact Manager.....	102
Contact Search window.....	112
Contact Details window.....	114
Recent Calls window.....	115
Agents window.....	122
Abandoned Calls window.....	124
Dial Status window.....	129
Event notifications.....	129

Audio features.....	131
Sound Arbitration Module.....	132
Audio 1/Audio 2.....	133
Master Volume window.....	133
Mute All.....	135
Greetings Manager.....	136
TTY window.....	136
Supervisory features.....	139
Agent monitoring	139
Console information.....	140
Date.....	141
Connectivity.....	141
Console and telecommunicator information.....	145
Message area on status bar.....	146
Customer branding.....	147
Notification of log messages.....	147
Switch.....	148
Web browsing	149
Call information transfer	152

Chapter 4 System Configurations

System configurations overview.....	156
Centralized configuration.....	156
Call flow basics.....	157
Telephony configurations.....	158
Telephony interfaces.....	158
MDS Configurator.....	159
Automatic Call Distribution features.....	160
Agent-based call routing.....	161
Auto Attendant.....	161
Auto Answer.....	162
Transfer to Queue.....	162
IP phone voice mail.....	163
On-hold RTP.....	163
Direct PSAP Interconnect.....	165
Call Filter Service.....	166
Pocket Dial Filter.....	166
Automated Abandoned Callback.....	167
Queue Selector.....	168
Call data processing configurations.....	170
DDS Configurator.....	170
Location information configuration.....	172
Resources configuration.....	173
Computer Aided Dispatch configuration.....	174

- Data transfer services..... 174
- Agencies..... 174
- Agent roles..... 179
- Alarm panel..... 180
- Audio alerter..... 180
- ESInet configurations..... 181
- System utilities..... 182
 - Console Configuration Utility..... 182
 - Database Schema Upgrade Utility..... 185
 - Auto Dial Migration and Speed Dial Migration Utilities..... 186

Chapter 5 Analysis and Reporting

- Analysis and reporting overview..... 190
- Instant Recall Recorder..... 190
 - IRR Instant Retrieval..... 191
 - IRR Voice Monitor..... 192
 - Playing the IRR recording to the caller..... 193
- Call Detail Records (CDRs)..... 194
- Activity View..... 195
 - Display Panel..... 197
- Event Writer..... 198
- VESTA 9-1-1 Network Management System..... 198
- VESTA Analytics..... 202
- VESTA 9-1-1 Heads-Up Display and Viewer..... 204

Chapter 6 System Specifications

- Product components..... 210
- Hardware specifications..... 213
- Full deployment system capacities..... 215
- Pocket Dial Filter specifications..... 217
- Automated Abandoned Callback specifications..... 217
- Queue Selector specifications..... 218
- Voice prompt specifications..... 218
- Enhanced Data Requests..... 218
- Audio..... 219
- VESTA 9-1-1 Core/VESTA 9-1-1 Essentials capacities..... 219
- Time synchronization..... 220
- QoS..... 220
- Location information..... 221
- CAD RS-232 protocols..... 226

Appendix A VESTA 9-1-1 vs VESTA Terminology

VESTA 9-1-1 Terminology.....	232
Glossary	235
Index	249

Page intentionally left blank

About the Product Guide

1

List of topics

- ◆ [Intended audience](#)
- ◆ [Terminology](#)
- ◆ [Related documents](#)

Intended audience

This guide is intended for

- ◆ Administrators who want to know more about the features and system configurations available to telecommunicators, as well as the tools that help manage the system.
- ◆ Consultants who may assist end customers investigate critical communications management products and services.
- ◆ Value added resellers who can use this document as a sales tool when they approach potential clients.
- ◆ Sales and systems engineers who plan the implementation of system installation.

Terminology

The Product Guide might use terminology that is unfamiliar. A familiar term can have a different meaning in different contexts: for example, in protocol descriptions.

The following table lists the terms that are used in the product guide and their equivalents in similar products.

Product Guide term	Equivalents
Call center	public safety answering point (PSAP)
telecommunicator	<ul style="list-style-type: none"> ◆ operator ◆ agent ◆ call taker
Emergency	9-1-1
Location information	automatic location information or automatic location identification (automatic location information (ALI))

Related documents

The VESTA 9-1-1 solution includes the following related documents:

- ◆ *Activity View User Guide* contains the essential tasks for using the real-time data analysis tool.
- ◆ *Administrator Guide* contains the configuration and design tasks that administrators can implement.
- ◆ *ASN Troubleshooting Guide* contains information for assessing and solving known problems on a VESTA 9-1-1 system.
- ◆ *Automated Abandoned Callback Quick Reference Card* contains a description of the Automated Abandoned Callback feature.
- ◆ *CDR Interface Control Document* contains information and procedures for configuring call detail records (CDRs), the structure of full and concise CDRs, and descriptions of CDR call events, including their formats, their parameters, and an example for each event.

- ◆ *CommandPOST Firewall and VPN Configuration Guide* describes the CommandPOST computer that runs the console program and provides procedures for configuring the operating system and firewall.
- ◆ *CommandPOST Quick Reference Card* provides prerequisite information and tasks for setting up a CommandPOST PSAP.
- ◆ *Configuration Guide* helps trained technicians configure and customize a system and the call-taking console. The *Configuration Guide* is also available from DDS Configurator and MDS Configurator.
- ◆ *Console Quick Reference Card* contains shorthand procedures for the most commonly used console tasks.
- ◆ *Console User Guide* contains the essential tasks that a telecommunicator performs on a console.
- ◆ *Enhanced Data Quick Reference Card* contains a description of the console Enhanced Data window and tabs.
- ◆ *Enhanced IP Phone User Guide* contains descriptions and tasks for operating IP phones on the system.
- ◆ *Enhanced IP Phone Quick Reference Card* contains quick tips for the Mitel enhanced IP phones.
- ◆ *Enhanced Soft Phone Quick Reference Card* contains shorthand procedures for key features on the Enhanced Soft Phone.
- ◆ *Glossary* provides a list of abbreviations, acronyms, and terms that are specific to the public safety, private safety, and telephony industry, and are used in Vesta Solutions documentation.
- ◆ *Installation and Maintenance Guide* helps trained technicians install consoles, new trunks, lines, and phones, and perform advanced system configurations.
- ◆ *Instant Recall Recorder Installation Manual* contains descriptions of the features and essential tasks for configuring and installing the IRR.
- ◆ *Instant Recall Recorder Operator Manual* contains descriptions of the features of the IRR and essential tasks for using the IRR.
- ◆ *IP Networking Guide* outlines the key requirements for the VoIP underlying network infrastructures and requirements for geo-diverse and multi-site deployments.
- ◆ *MDS Voicemail Help* provides a Web-based Help system to aid system administrators and telecommunicators to manage and retrieve voice mail.
- ◆ *Migration Guidelines* provides instructions that Vesta Solutions technicians use to migrate a system from Sentinel Patriot 3.2/3.3 to VESTA/Sentinel 4 Release 3.
- ◆ *New Agency Planning Form* is a spreadsheet that can be used to record system and user information for the creation of multiple agencies on a VESTA 9-1-1 system.
- ◆ *Network Management System User Guide* provides instructions about how to use the Network Management System (NMS).
- ◆ *Operating System Migration Guide* contains instructions and information that a technician requires for migrating the VESTA 9-1-1 operating system (OS) from a Microsoft Windows 7, Windows Server 2008 R2 SP2 environment to a Microsoft Windows 10, Windows Server 2012 R2 environment.
- ◆ *Product Guide* contains general component and feature descriptions of the system, including sub-components.
- ◆ *Product Release Brief* contains descriptions of the major additions and changes to the system in the current release.
- ◆ *Release Notes* contains a summary of the product enhancements, resolved issues from earlier releases, and known issues of the current VESTA 9-1-1 release. The release

notes also contains upgrade information, a list of customer documents, and a table of third-party applications that operate with the release.

- ◆ *Remote Ringer Configuration Guide* contains descriptions and configurations for the remote analog ringer and the remote SIP ringer, which provide notifications to call center workers.
- ◆ *SAM Installation Guide* contains installation and operation procedures for the Sound Arbitration Module that manages the audio and other controls for external communication devices and auxiliary equipment that reside at a console.
- ◆ *Text to 911 Quick Reference Card* contains a summary of the differences between the handling of text and voice calls and procedures for handling text calls on the console.
- ◆ *Upgrade Procedure* contains procedures for upgrading an existing system.
- ◆ *Utilities Guide* contains information about using the Auto Dial Migration Utility, the Speed Dial Migration Utility, the Console Configuration Utility, and the Database Schema Installation and Upgrade Utility.
- ◆ *VESTA 9-1-1 vs VESTA Classic Quick Reference Card* contains equivalent console procedures for VESTA 9-1-1 and classic VESTA tasks.
- ◆ *Voice Mail User Guide for IP Phone* helps system administrators and telecommunicators manage and retrieve voice mails.

List of topics

- ◆ What is VESTA 9-1-1?
- ◆ Text calls
- ◆ Component types
- ◆ System Virtualization
- ◆ Upgrades to VESTA 9-1-1 Release 7.2 Service Pack 1
- ◆ Deployment options
- ◆ Local survivability support
- ◆ Enhanced IP phones
- ◆ Enhanced Soft Phone

What is VESTA 9-1-1?

VESTA 9-1-1 is an IP-based emergency response system that enables organizations to receive emergency event notifications (such as emergency calls) and to initiate effective and timely responses.

Emergency notifications that arrive at a call center are answered by call takers who are assisted by technologies that retrieve caller location information automatically and help a telecommunicator send the fastest and most appropriate emergency responders. The system also contains a wide range of management tools to customize and optimize the system.

VESTA 9-1-1 operates with [National Emergency Number Association \(NENA\)](#)-defined [Next Generation 9-1-1 \(NG9-1-1\)](#) architecture and standards to support both voice and text emergency calls and transfers over an IP-based [Emergency Services IP Network \(ESInet\)](#).

Call taking

VESTA 9-1-1 emergency call centers can receive voice and text emergency calls from the following methods:

- ◆ Legacy telephone networks ([public switched telephone network \(PSTN\)](#)) on emergency trunks ([Centralized Automatic Message Accounting trunk \(CAMA trunk\)](#))
- ◆ Network calls that are mediated through the [NENA](#)-defined [ESInet](#)
- ◆ Text calls that originate from mobile subscribers on carrier networks

Emergency notifications, such as calls, can arrive on both phones and consoles. Consoles are computers that provide emergency and non-emergency call handling, including call transfers, conferences, monitoring, and emergency-responder contact information. Telecommunicators can receive emergency voice calls that are allocated through [automatic call distribution \(ACD\)](#), shared line appearances, or repositories of calls (called *call queues*). Consoles can also be configured to receive and respond to emergency text calls. In response to both emergency voice and text calls, telecommunicators can dispatch emergency responders by using caller-location information that is queried from the location information server.

In addition to these basic activities, telecommunicators can transfer calls, add participants to a two-party call, look up contacts, such as emergency responders, return any inbound or outbound call and abandoned call, and receive text and voice calls over an [ESInet](#).

Related Links

[Console Features](#) on page 39

Telephony

VESTA 9-1-1 provides telephony components, such as media gateways between the [PSTN](#) and the VESTA 9-1-1 network, a [private branch exchange \(PBX\)](#), a facility to configure lines and telephones, a customizable multi-level auto-attendant, and call distribution services. The [Call Filter Service \(CFS\)](#) enables administrators to automate the detection, response, and filtering of abandoned and accidentally dialed 9-1-1 calls.

VESTA 9-1-1 call distribution sends emergency voice calls to answering positions based on a pre-set call routing scheme. [ACD](#) defines the specific order and criteria by which calls are routed to telecommunicators. [ACD](#) can also manage the flow of calls by distributing them to different queues, such as queues for administrative and emergency calls. The [in-calls appearance \(ICA\)](#) can be configured on the console to receive and handle calls from [ACD](#). A

telecommunicator can move a call from the ICA to a [personal call appearance \(PCA\)](#) to make the ICA available for ACD calls.



Abandoned calls can be presented at the ICA as additional ACD calls to call back.

Note

Voice call queues are repositories of calls that appear on a console in the form of [multiple call appearance \(MCA\)](#). A telecommunicator can request calls from the queue itself or from a **Multi Calls** button that shows the longest-ringing call on the highest-priority queue.

Alternatively, calls can arrive on the system, where they are picked up by a telecommunicator on shared lines ([shared call appearance \(SCA\)](#)) that are dedicated to emergency voice calls.

Emergency text calls are queued for pickup on a console on a mapped [text multiple call appearance \(text MCA\)](#) or are retrieved directly from a mapped text calls list.

Related Links

[Automatic Call Distribution features](#) on page 160

[MDS Configurator](#) on page 159

Call data processing

VESTA 9-1-1 provides data-handling services, including the retrieval and extraction of the location information of an emergency caller. Administrators can also perform data management tasks: for example, how emergency information is displayed in the Call Information Display area of a console and how location information is sent to an emergency responder.

Location information is used to dispatch emergency services by using the [computer-aided dispatch \(CAD\)](#) server of the customer.

Site administrators can create multiple agencies that share system resources with other agencies or use resources that are dedicated exclusively to the agency.

Call data can be sent to management information systems and other call-data reporting features, such as a [call detail record \(CDR\)](#)-configured printer.

Voice and text queue events are sent to windows on individual consoles and a wallboard for general viewing.

Related Links

[DDS Configurator](#) on page 170

System management

System management is a broad category of recording, storage, analysis, and reporting tools that help operate, troubleshoot, and improve performance. These tools range from basic event collection to a sophisticated [management information system \(MIS\)](#).

Tracking, recording, and information management tools help administrators diagnose system problems, measure the loads on their system, assess the adequacy of their resources, and understand patterns in call frequency and type.

Related Links

[Analysis and Reporting](#) on page 189

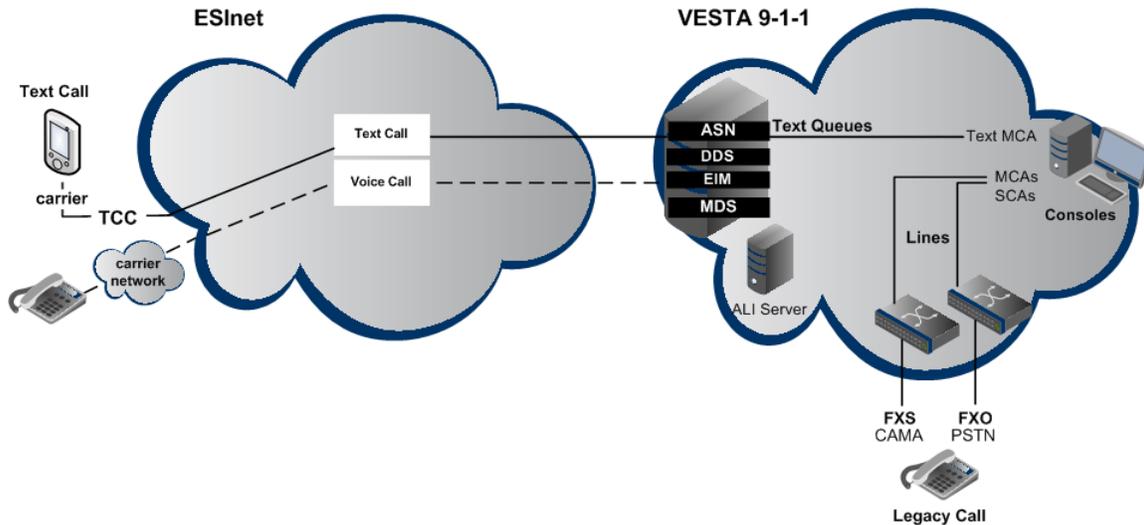
NG9-1-1 support

Next Generation 9-1-1 (NG9-1-1) is a NENA-defined set of features and functions, applications, and databases for deploying an emergency communications system that is built on IP-based networks. NG9-1-1 expands emergency service response, information sharing, and involvement to participants that are connected to an ESInet.

The i3 architecture is the first set of standards that are defined for NG9-1-1. The ESInet is an i3 network specification, which is defined by NENA as an IP-based inter-network (that is, a network of networks) that is shared by all agencies that may be involved in any emergency. An i3-compatible PSAP can receive IP-based signaling and media from the ESInet in the processing of emergency calls. ESInets provide an interface between the call center and other networks, such as telephony carriers (wireline and wireless), an Internet service provider (ISP), Internet Protocol (IP) networks, E9-1-1 systems, and other ESInets.

For the day-to-day operations of an emergency call center, a full NG9-1-1 implementation means the following:

- ◆ Widened range of emergency call types and media to text calls over IP networks and video
- ◆ Direct handling of Internet calls



VESTA 9-1-1 ESInet functionality

VESTA 9-1-1 systems can conference calls that originate from an ESInet, convert location information from ESInet-based wireless and wireline calls into ALI, enable transfers and conferences with network-based emergency responders, and identify the appropriate emergency response based on call information and required service.

The following table summarizes key 9-1-1 call-taking functions that a VESTA 9-1-1 operation handles in an ESInet environment:

Function	VESTA 9-1-1 support
Receive voice and text calls from ESInet service providers	Connects an ESInet Interface Module (EIM) with multiple ESInet service providers, based on a queue uniform resource identifier (URI) on a per-agency basis.

Function	VESTA 9-1-1 support
Receive and convert caller location information	Converts location values to ALI . Location information can arrive at a VESTA 9-1-1 system from the ESInet in the form of Presence Information Data Format Location Object (PIDF-LO) , either by a direct location value or by a URI that is used to derive a location value from an external location server. Extensible Stylesheet Language Transformations (XSLT) conversion files produce legacy ALI , which is used, for example, in the Call Information Display window, the Recent Calls window, CAD , and applications, such as VESTA Locate. Manual ALI queries continue to use the agency ALI Profile Group on ESInet voice calls.
Identify appropriate service providers for the emergency	Receives transfer agency contact information from the ESInet based on the emergency caller's location. Service uniform resource name (URN) s are used to request specific emergency services from the ESInet. The transfer agencies display in the console Dial Directory and can be updated when the caller changes location.
Conference calls with network transfer agencies	Interfaces with the ESInet for network conference call handling. The transfer agencies retrieved from the ESInet are derived from the Service URNs configured in the Contact Manger .
Transfer calls to network transfer agencies	Telecommunicators can transfer calls routed from the ESInet to a transfer agency by using a URI that in configured on the contact.
Process NENA Call ID and Incident ID	Calls arriving from the ESInet carry in their signaling call information, such as Call ID and Incident ID. An Incident ID is a single identifier for an incident in which one or more calls are recorded on the system. VESTA Analytics can process these identifiers for tracking and analysis. Both IDs take the form of a globally unique identifier (GUID) .

VESTA NG9-1-1 component support

As it migrates to a full NG9-1-1 implementation that uses the NENA i3 standard, VESTA 9-1-1 itself operates on a network and can receive voice calls and emergency text calls from the [ESInet](#). Users can both conference and transfer network voice calls (VoIP-over-PSTN) and transfer text calls to other agencies or text queues on the same VESTA 9-1-1 system.

VESTA 9-1-1 communicates with an ESInet on virtualized, redundant hardware that contains the following telephony, IP, data management, location processing, and configuration applications:

- ◆ **Advanced Services Node (ASN)** — consists of a set of independent modules that terminates the routing of text calls on the emergency call center and sends text messages to the console text queues for pickup by other telecommunicators. Location information is delivered to the console with the text call using **PIDF-LO**, an XML format used to carry location information such as the geodetic coordinates of a call or civic address. Other modules coordinate interactions among other modules, serve as an operational database, and store policies to govern activities, such as routing. The ASN configuration application is VESTA ConfigPoint.
- ◆ **EIM** — operates on the DDS to terminate voice calls from the ESInet. The DDS derives location information from legacy ALI servers on the VESTA 9-1-1 system.
- ◆ **DDS** — hosts the EIM and manages call handling and call information tasks.

Related Links

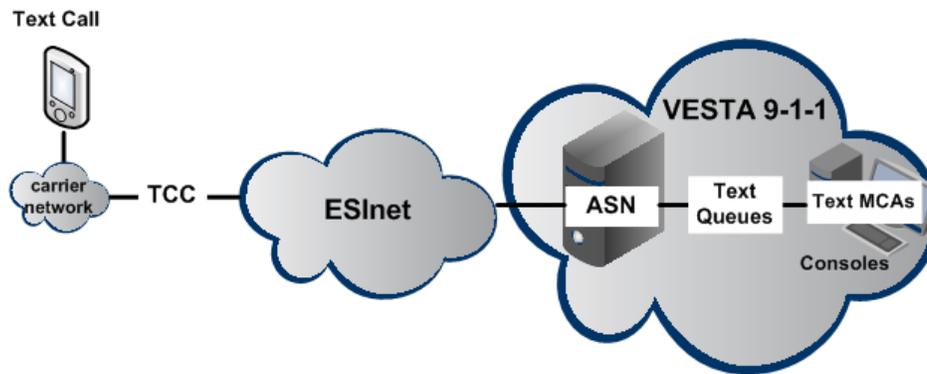
[Network Conference](#) on page 81

[Network Drop Last](#) on page 81

Text calls

A VESTA 9-1-1 telecommunicator can receive emergency text calls from any mobile device and respond to callers with editable quick messages or messages they create themselves. A text call moves from a caller to a telecommunicator with location information through either the **ESInet** or another IP network:

- ◆ Text-to-911 calls originate with a mobile subscriber sending a text message to 9-1-1
- ◆ The carrier routes the call to a **text call center (TCC)**, which aggregates the emergency text calls of multiple carriers.
- ◆ TCC queries the location information of the caller (cell tower and sector) and routes the call to the emergency response center associated with that location.
- ◆ The emergency response center is identified by a URI which corresponds to a queue in the VESTA 9-1-1 system Advanced Services Node **ASN**. The call may either be routed directly or through an ESInet.
- ◆ Text calls terminate on the VESTA 9-1-1 ASN with the information of the calls
- ◆ ASN routes calls to text queues that are mapped to consoles. Routing can be configured by, for example, agency, time of day.
- ◆ A telecommunicator can pick up text calls from the text queues from a Text MCA or **Text Calls** window.
- ◆ Picked up text calls are handled through the **Text Conversations** window from which a telecommunicator can respond to text callers and transfer calls to transfer agency queues.
- ◆ If a text call is abandoned, a telecommunicator can try to contact the text caller by a voice call.



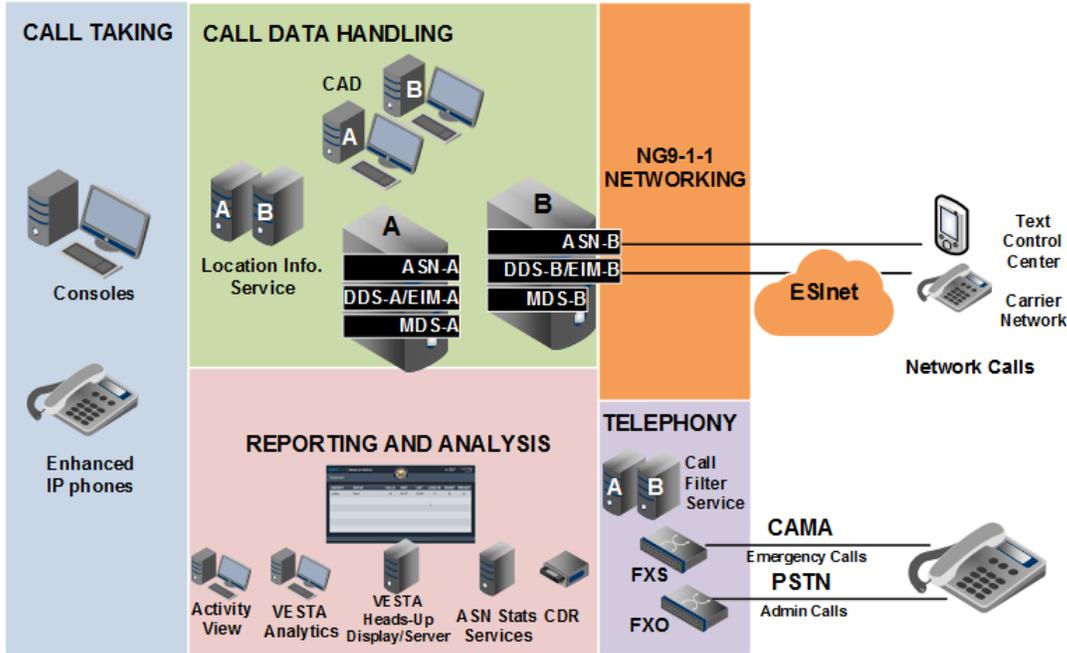
Component types

The [customer-premises equipment \(CPE\)](#) of the system perform the core functions.

- ◆ **Reporting and analysis**—Collecting and processing data about calls and the activities on the call center depend on the kind of data captured and its use.
 - ◆ Call audio recordings can be received on an [Instant Recall Recorder \(IRR\)](#).
 - ◆ Call detail records ([CDR](#)) can be sent to a printer or log file.
 - ◆ Call center activities can be reported live on a display panel through the **Activity View**
 - ◆ Operational data can be collected and analyzed on a server-based management information program, [VESTA Analytics](#)[®].
 - ◆ The ASN uses stats adapters to process messages and events generated from functional elements in the i3 ESInet and consoles in the emergency call centers. The captured data is formatted for and distributed to subscribers of the data, such as logging recorders, management information systems, and displays.
 - ◆ The [VESTA](#)[®] 9-1-1 Heads-Up Display delivers agency-based call center data to a wall-mounted screen. For example, a call center can display real-time queue information, such as number of calls, number of agents, and call waiting times.
- ◆ **Call data handling** — DDS servers handle data associated with each administrative or emergency voice call and present it to a telecommunicator (for example, caller location information). DDS also handles [CAD](#) data transfers, tracks activities, and sends information to [CDR](#) printing. DDS can be connected to the CAD or location servers through a LAN to WAN network interface or by an RS-232 serial connection. The DDS hosts the EIM, which interprets [ESInet](#) SIP messaging on network-based voice calls.
- ◆ **Call taking** — A telecommunicator can receive voice and text calls, place voice calls, callback text calls, transfer and conference calls, and dispatch emergency services from the console. A [Voice over Internet Protocol \(VoIP\)](#) phone set lets a telecommunicator receive and place calls with an extensive set of call handling features.
- ◆ **Telephony** — MDS Configurator contains the PBX. It provides the interface between the telephone system and the call taking system. Text calls are received and routed on text queues on the ASN. Calls can be allocated to telecommunicators based on selected distribution scheme. A customizable auto attendant supports the creation of call screening to direct calls based on language and type of call. The [CFS](#) hosts the Pocket Dial Filter, Automated Abandoned Callback filter, and the Queue Selector.
- ◆ **NG9-1-1 Networking** — The ASN receives and queues emergency text calls for pick up on the [VESTA 9-1-1](#) consoles. The ASN has its own management servers that push configuration data to its network elements.

Each element of the CPE contains sub-components. For the purpose of this overview, a simplified architecture is shown in the figure below.

VESTA 9-1-1



Related Links

- [Call flow basics](#) on page 157
- [Deployment options](#) on page 26
- [Telephony configurations](#) on page 158

System Virtualization

In earlier versions of VESTA 9-1-1, each of the data handling and telephony system components, such as the DDS and MDS operated redundantly on two servers: that is, two physical DDS servers and two physical MDS servers. With the introduction of a virtualized server environment, fewer physical servers can be deployed while maintaining the same system and redundancy requirements.

Virtualization in a new VESTA 9-1-1 system involves the creation of [virtual machine \(VM\)](#)s on two physical servers instead of four on a non-virtualized system. On each server, three virtual machines are created for the Text-to-9-1-1 [Short Message Service \(SMS\)](#), one virtual machine for the DDS/EIM, and one for the MDS.

VESTA 9-1-1 component	VM operating system
DDS/EIM	Windows Server 2012 R2
MDS	CentOS 4.9
ASN (Text-to-9-1-1 SMS, Real Time Statistics, Repository/Tools, Enhanced Data service)	CentOS 6.5

VESTA 9-1-1 component	VM operating system
Call Filter Service	CentOS 7.2
ConfigPoint Management (Text-to-9-1-1 SMS)	CentOS 6.5

All VMs can be allocated processing, memory, and storage resources from the same server depending on the requirements of each application. As a result, fewer servers are needed and capital, operation, and maintenance costs are lowered.

The VM deployment can economize resources. For example, a non-virtualized VESTA 9-1-1 environment would require the two servers for DDS/EIM, two servers for the MDS, two servers for the ASN Node, two servers for ASN management, one repository server, and one tools server.

ESXi hypervisor is a VMware vSphere product that hosts, creates, and runs the guest VMs. VMware® vSphere is deployed on select servers and allows the deployment of fewer hardware resources (that is, servers and workstations) and maximize available resources on each system.

The VMware vSphere products and features are supported by Vesta Solutions:

- ◆ **ESXi hypervisor** — software that is installed on a host server that:
 - ◆ Resides in a datacenter, which aggregates all the objects for creating and managing the virtual environment, including the VMs, host servers, networks, and datastores.
 - ◆ Manages the allocation of physical resources to the VMs based on operational requirements.
For example, if a VM on a host server is idle, the processing resources allocated to it can be used by another VM.
 - ◆ Assigns processor, memory, and other resources to the VMs based on the configuration.
- ◆ **vSphere Client** — software installed on a management workstation that:
 - ◆ Provides a user interface for creating, managing, and monitoring virtual machines, their resources, and their hosts.
 - ◆ Provides console access to virtual machines.
 - ◆ Provides a full range of administrative functionality for the options available in a single host configuration.

The hardware requirements for virtualization on a VESTA 9-1-1 system depend on such variables as call volumes, the number of positions, and other system components, such as VESTA™ Analytics.

Upgrades to VESTA 9-1-1 Release 7.2 Service Pack 1

The following table lists the base VESTA 9-1-1 releases from which the system can be upgraded to Release 7.2 SP1. For earlier systems that cannot be upgraded directly to Release 7.2 SP1, the required intervening system upgrades are provided.

A Hot Fix or Service Pack of the following product versions is included in the upgrade path.

VESTA 9-1-1 base release	Upgrade conditions
VESTA 9-1-1 7.2	<ul style="list-style-type: none"> ◆ Direct upgrade to VESTA 9-1-1 7.2 SP1 ◆ With or without ASN ◆ With or without CFS
<ul style="list-style-type: none"> ◆ VESTA 9-1-1 R7.1 ◆ VESTA 9-1-1 R7.1 FP1 	<ul style="list-style-type: none"> ◆ Direct upgrade to VESTA 9-1-1 7.2 ◆ With or without ASN ◆ With or without CFS
VESTA 9-1-1 7.0	<ul style="list-style-type: none"> ◆ Direct upgrade to VESTA 9-1-1 7.2 ◆ With or without ASN ◆ With or without CFS
<ul style="list-style-type: none"> ◆ VESTA 9-1-1 R6.0 ◆ VESTA 9-1-1 R6.1 	<ul style="list-style-type: none"> ◆ Direct upgrade to VESTA 9-1-1 7.2 ◆ With or without ASN ◆ With or without CFS
<ul style="list-style-type: none"> ◆ VESTA/Sentinel 4 R3 ◆ VESTA/Sentinel 4 R3.1 ◆ VESTA/Sentinel 4 R3.2 	<ul style="list-style-type: none"> ◆ Direct upgrade to VESTA 9-1-1 7.1 ◆ With or without ASN ◆ With or without CFS
VESTA/Sentinel 4 Release 2 HF5	<ul style="list-style-type: none"> ◆ Direct upgrade to VESTA 9-1-1 7.0 ◆ With or without ASN

VESTA 9-1-1 System Maintenance Utility

The System Maintenance Utility aims to make VESTA 9-1-1 system upgrades faster and simpler. The utility contains an installer that automates operations that replace many of the manual tasks that are required to upgrade available client and redundant server components, such as:

- ◆ VESTA 9-1-1 consoles
- ◆ DDS (A-side and B-side)
- ◆ [EIM](#) (A-side and B-side)
- ◆ MDS (A-side and B-side)
- ◆ [ASN](#) (Node-1 and Node-2, including [ASN Tools](#) and [ASN Management](#) components)
- ◆ Call Filter Service
- ◆ [IRR](#)

The System Maintenance Utility runs pre-upgrade checks, such as taking an inventory of components that require upgrade, validating that the system is ready to be upgraded, and backing up files (for example, registries and databases).

Post-upgrade tasks ensure that the VESTA 9-1-1 system has been upgraded properly.

Deployment options

VESTA 9-1-1 systems can be deployed in a number of ways that range from geographical distribution, to levels of redundancy and features.

VESTA 9-1-1 WAN distribution

The system's components (such as servers and consoles) can operate on a [wide area network \(WAN\)](#) and can support various deployment architectures, such as multi-site centralized, dual-site distributed, single-site centralized, and multi-site distributed.

In a centralized architecture, all call processing and data management servers are located at the same site. The distributed architecture disperses the servers across two different locations for site diversity. Whether centralized or distributed, the system may also host one or more remote agencies such as an emergency call center. In all deployments, CommandPOST can provide remote emergency call taking functions outside an emergency call center. Typically, CommandPOST is connected to a call center through the public, unsecured Internet access on a [virtual private network \(VPN\)](#). Firewalls are used on the system to terminate VPNs and to allow remote access to the site.



Note

The term *remote agency* refers to an agency (for example, call center) that is not co-located with the servers that are hosting it. The agency is only equipped with the necessary data network equipment (for example, switches and routers), consoles and other components (for example, administrative phones, gateways, [CAD servers/consoles](#)) as required.

VESTA Core

To serve the needs of smaller single-site emergency call centers, the VESTA Core solution provides a redundant software configuration with a non-redundant hardware platform.

VESTA Essentials

Smaller operations that require component redundancy across multiple sites can deploy VESTA 9-1-1 with a limited set of components and features.

Related Links

[Single-site centralized architecture](#) on page 27

[Dual-site distributed architecture](#) on page 28

[Multi-site centralized architecture](#) on page 29

[Multi-site distributed architecture](#) on page 29

[VESTA Core](#) on page 30

[VESTA Essentials](#) on page 31

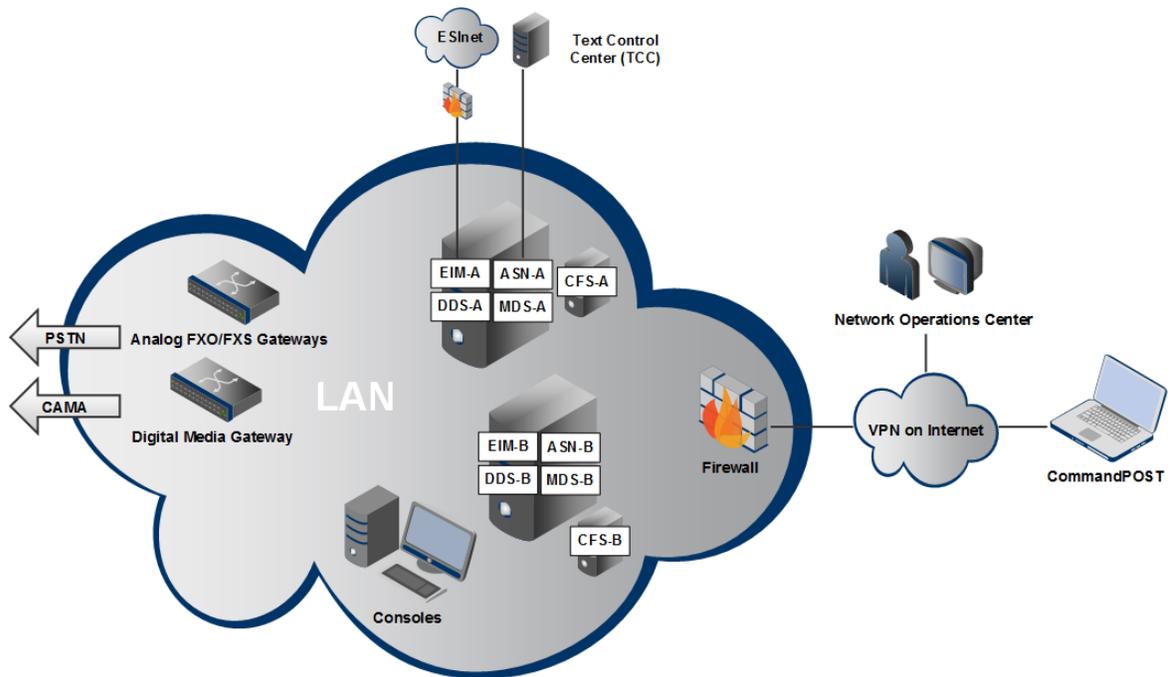
[Component types](#) on page 23

Single-site centralized architecture

The following single-site VESTA 9-1-1 system deployments are available:

- ◆ Redundant hardware and software deployment to handle larger capacities with a network operations center running on a management console
- ◆ VESTA[®] 9-1-1 Core—Single hardware server deployment with redundant software on smaller sites without a management console
- ◆ VESTA[®] 9-1-1 Essentials—Redundant hardware and software deployment on smaller sites without a management console

All call processing and data management functions are located on the same [local area network \(LAN\)](#) as the telecommunicator positions. Such a single-site, centralized LAN is typically confined to a single building.



The VESTA 9-1-1 redundant server delivers the Media Distribution Service (MDS), Data Distribution Service (DDS), EIM, Call Filter Service (CFS), and ASN applications on two redundant physical servers, in which the call center remains fully operable after the failure of one of the servers. The system also has dual switches and gateways for additional failover capacity.

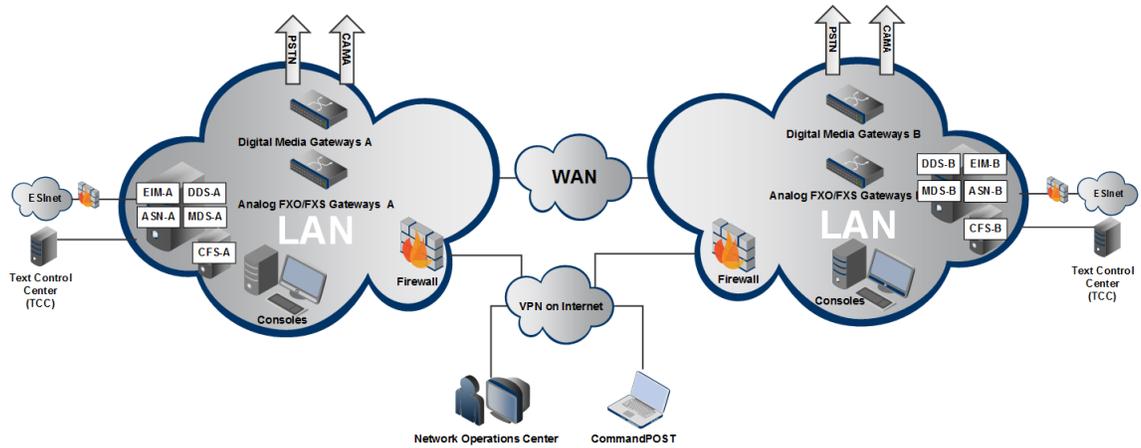
For sites that demand higher voice call capacities, systems that support up to 250 positions are available with a management console on a network operations center.

Related Links

- [VESTA Core](#) on page 30
- [VESTA Essentials](#) on page 31

Dual-site distributed architecture

The call processing and data management functions of the system are distributed across two geographically-dispersed sites. Telecommunicators at active positions can answer calls at Site A, while Site B is configured with backup positions that can be staffed as required. In this configuration, however, the system does not host a remote agency. It is the simplest form of a distributed system architecture.

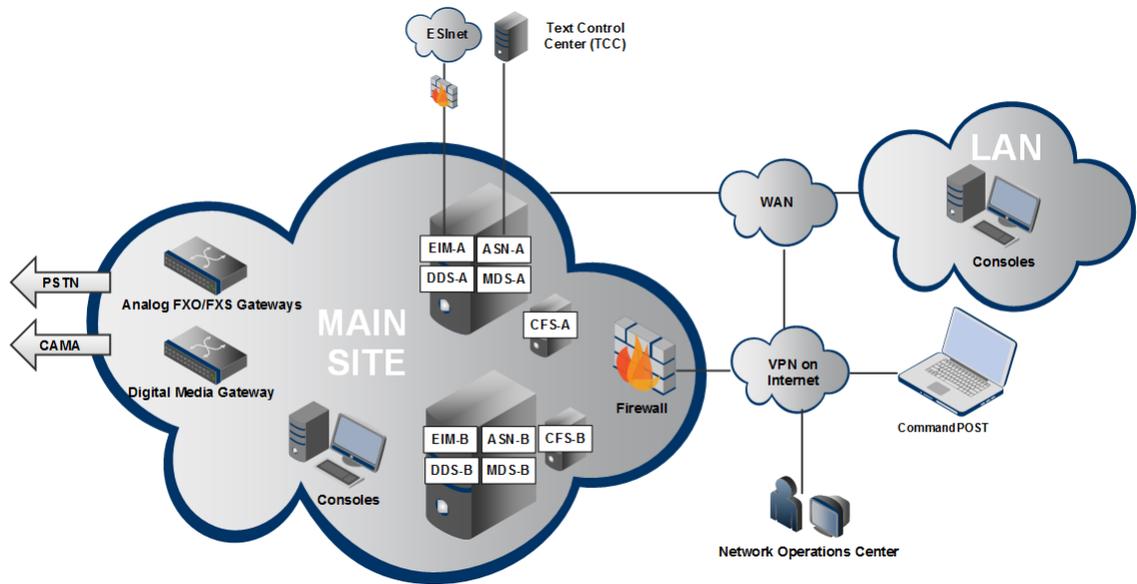


Related Links

[VESTA Essentials](#) on page 31

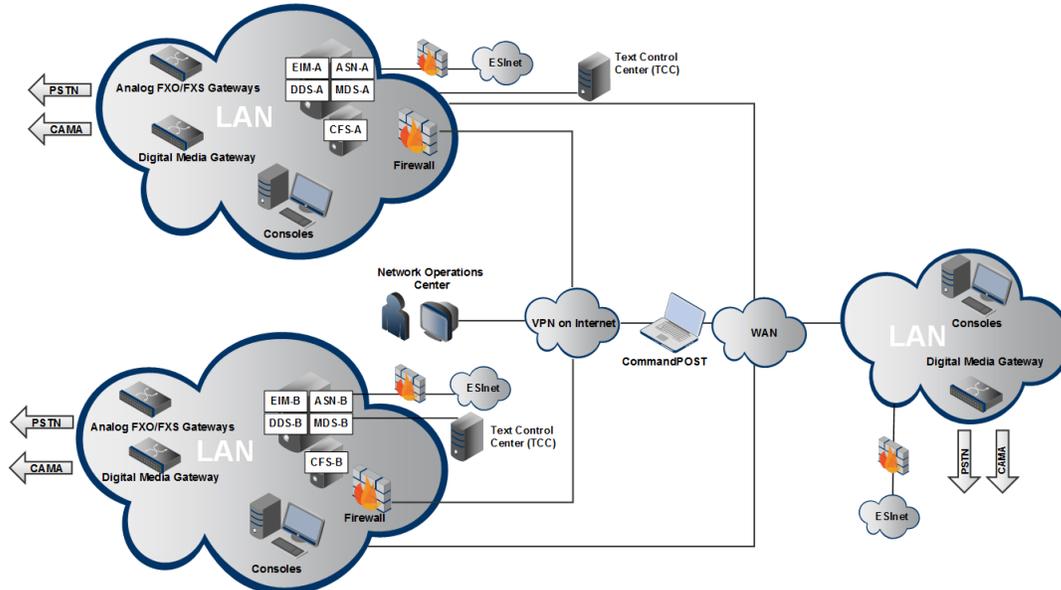
Multi-site centralized architecture

Call processing and data management functions are either housed in the same room or in a different room within the same building that is connected by a LAN to a co-located agency. However, the system can host one or more remote agencies and support CommandPOST.



Multi-site distributed architecture

This full-fledged architecture represents the most complex type of deployment. As the following figure shows, the system is geographically dispersed and, at the same time, hosts remote agencies. Site A (the Main Site) and Site B (the Backup Site) are located at two different agencies, in which each is staffed with active telecommunicator positions.

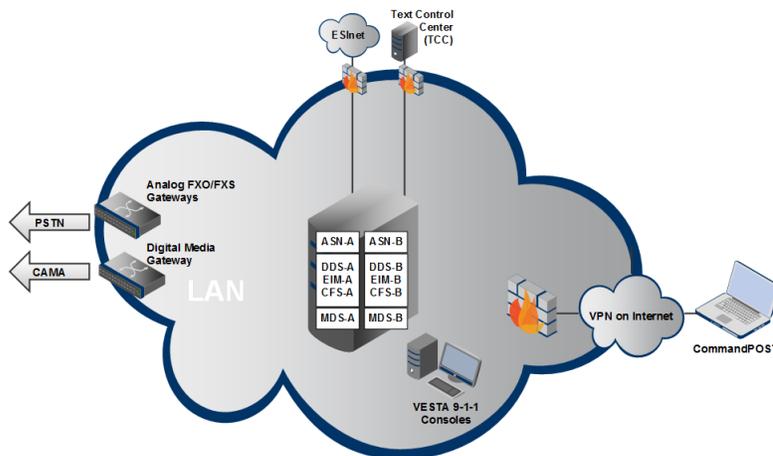


VESTA Core

VESTA 9-1-1 Core is a redundant software deployment on a single server (running virtualized Media Distribution Service (MDS), Data Distribution Service (DDS), EIM, Call Filter Service (CFS), and ASN applications) for single sites of two to five positions and have 100,000 or fewer voice and text calls per year. A management console is not provided.

VESTA 9-1-1 Core is packaged with the following set of hardware and software components to meet the needs of smaller sites:

- ◆ VESTA 9-1-1 system license
- ◆ VESTA™ Analytics Lite MIS solution, CAD interface license
- ◆ Console positions, including workstation, 20" wide screen monitor, basic jackbox kit, Sound Arbitration Module (SAM) PC speaker kit
- ◆ Single servers, gateways, switches
- ◆ Backroom equipment, including an equipment rack with monitor, keyboard, mouse, network printer, RS-232 Data Sharer



This deployment option operates with a single [foreign exchange office \(FXO\)](#) gateway and [foreign exchange station \(FXS\)](#) gateway.

Related Links

[Single-site centralized architecture](#) on page 27

VESTA Essentials

VESTA 9-1-1 Essentials is a redundant server deployment (running virtualized Media Distribution Service (MDS), Data Distribution Service (DDS), [EIM](#), Call Filter Service (CFS), and [ASN](#) applications) for smaller-scale sites of 10 or fewer positions. The following configurations are available:

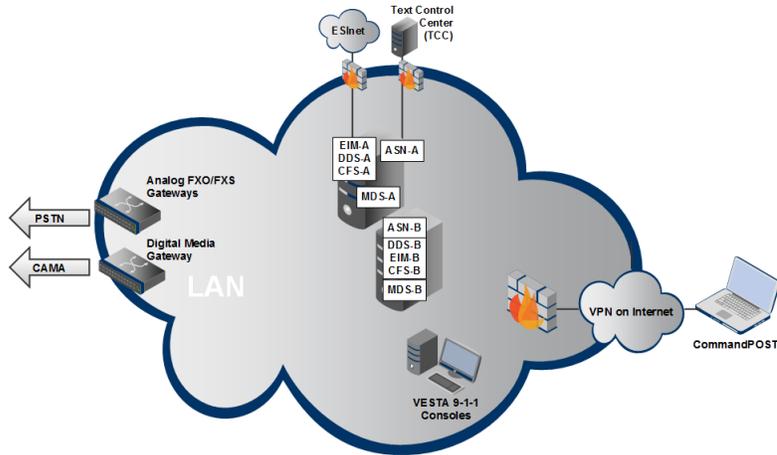
- ◆ Small server configuration — 100,000 or fewer text and voice calls per year.
- ◆ Medium server configuration — 500,000 or fewer text and voice calls per year. The number of lines and trunks with the call volume can be the same as a full VESTA 9-1-1 system.

A management console is not provided.

VESTA 9-1-1 Essentials is packaged with the following set of redundant hardware and software components to meet the needs of smaller sites:

- ◆ Redundant servers, gateways, switches deployed either on
 - ◆ Single site — All equipment on a single site
 - ◆ Multiple sites
 - ◆ All redundant servers and gateways on a host site with consoles distributed over one or more sites.
 - ◆ Redundant servers distributed over two sites, both of which have consoles.
- ◆ VESTA 9-1-1 system license
- ◆ VESTA™ Analytics Standard (for medium server configurations) or VESTA™ Analytics Lite [MIS](#) solution options
- ◆ CAD interface license
- ◆ Console positions, including workstation, 20" wide screen monitor, basic jackbox kit, [SAM](#) PC speaker kit
- ◆ Backroom equipment, including an equipment rack with monitor, keyboard, mouse, network printer, server KVM switch, RS-232 Data Sharer

The following diagram shows a single site deployment of a VESTA Essentials using redundant servers. A geo-diverse deployment involves more than one site either showing the servers on one site hosting a satellite console site or the servers distributed between them.



This deployment option operates with FXO gateways and FXS gateways on single or multiple sites.

Related Links

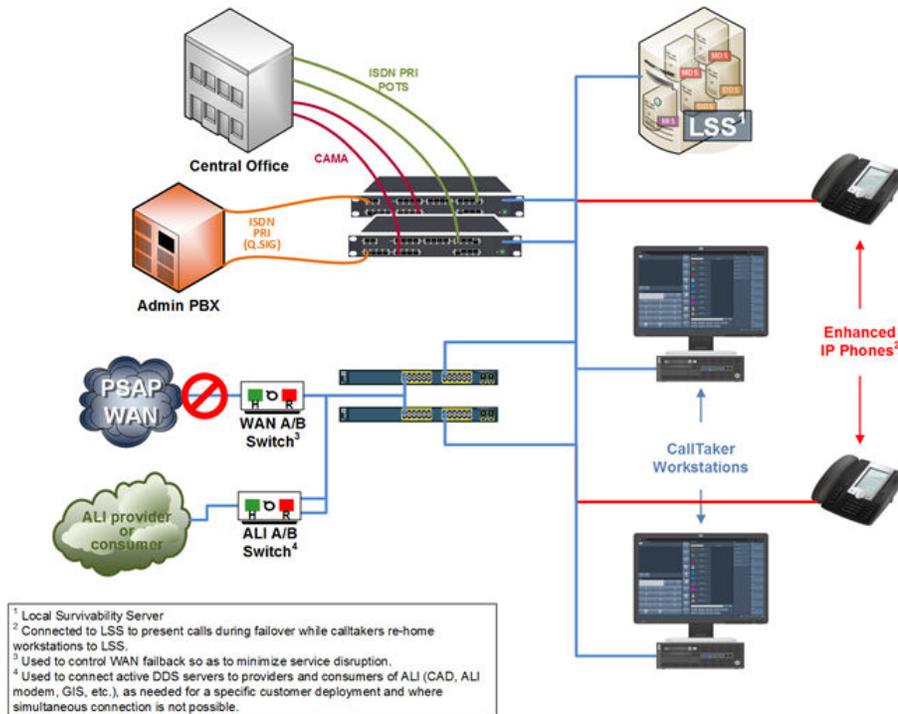
[Single-site centralized architecture](#) on page 27

[Dual-site distributed architecture](#) on page 28

Local survivability support

With the optional Local Survivability solution, a hosted VESTA 9-1-1 system can operate as an isolated remote system after its network connection with the host is lost.

This new configuration involves deploying redundant instances of VESTA 9-1-1 the Media Distribution Service (MDS) and the Data Distribution Service (DDS) by using an additional physical server deployed at the remote site. The server becomes the Local Survivability Server in the event of connectivity loss to the primary host(s) as depicted in the following drawing.



Enhanced IP phones

When logged on to the [IP](#) phone, you have access to the [SCA](#) line capabilities as well as any [ACD](#) queues. If you are not logged on, the IP phone functions as a basic phone, where you can make and receive station to station calls. You can also make and receive station to station calls if you are logged into the ACD.

VESTA 9-1-1 supports the following [IP](#) phone and expansion module:

- ◆ Mitel 6867/6737i /6757i
- ◆ Mitel M685i/675i expansion modules

An Enhanced IP phone is associated with a specific agency and a call taker's default role and agency impact the phone behavior. For more detailed information regarding the Mitel IP phones, refer to the Mitel 6867/6737i/6757i IP Phone User Guides on the Mitel Website.



Note

The Enhanced IP phone itself does not provide [teletypewriter \(TTY\)](#) capability. To provide TTY capability, a TTY device, purchased separately, must be used with the Enhanced IP phone.

These Mitel phones are fully interoperable, expandable IP phones and feature an LCD display. The phones provide communications over an IP Network using the [session initiation protocol \(SIP\)](#).

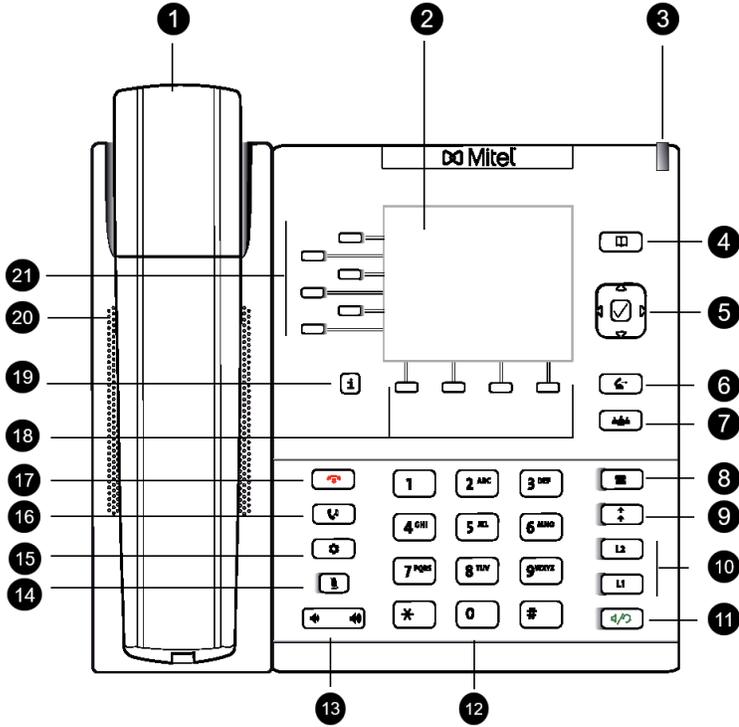
When you log on to the Enhanced IP phone with a user name and password, you can:

- ◆ Answer a 9-1-1 call
- ◆ View and clear the location information of the caller
- ◆ Manually request location information retransmit during a call
- ◆ Place and retrieve calls on local hold

- ◆ Send calls to [transfer to queue \(TTQ\)](#) on a [vector directory number \(VDN\)](#)
- ◆ Transfer calls
- ◆ Create conference calls
- ◆ Access shared call appearance lines

Mitel 6867

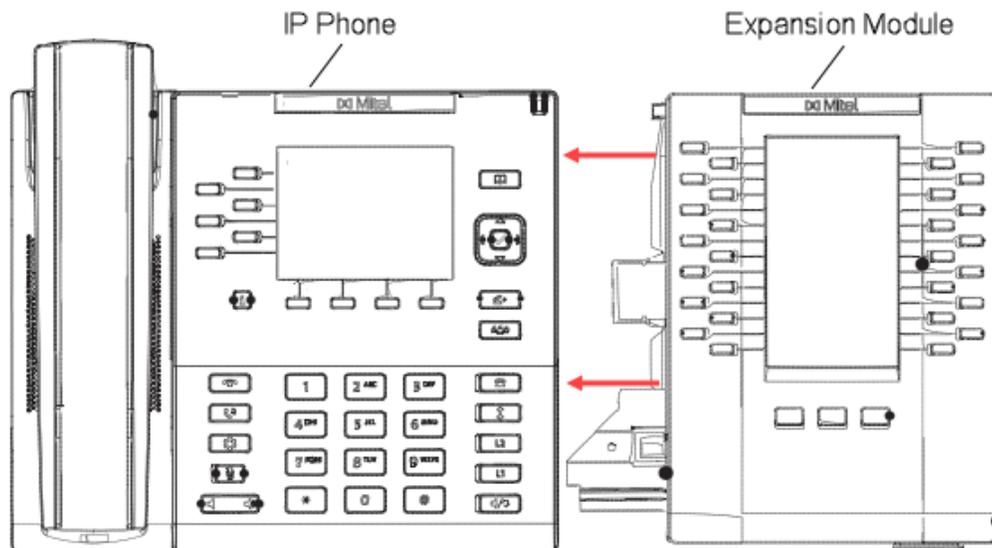
The following image shows the layout of the Mitel 6867 IP phone. You can find more information in the Mitel 6867 IP phone user guides on the Mitel Web site.



Key	Description	Key	Description
1	Mitel 6867 handset	12	Keypad
2	Color 3.5" 320x240 pixel liquid-crystal display (LCD). It shows: <ul style="list-style-type: none"> ◆ line number and name ◆ status display ◆ status notifications 	13	Volume Control key
3	Message LED — color and status indicate a specific event: for example, message waiting	14	Mute key <ul style="list-style-type: none"> ◆ Activates and deactivates the hands-free mode ◆ Activates and deactivates the handset microphone ◆ Activates and deactivates the headset microphone

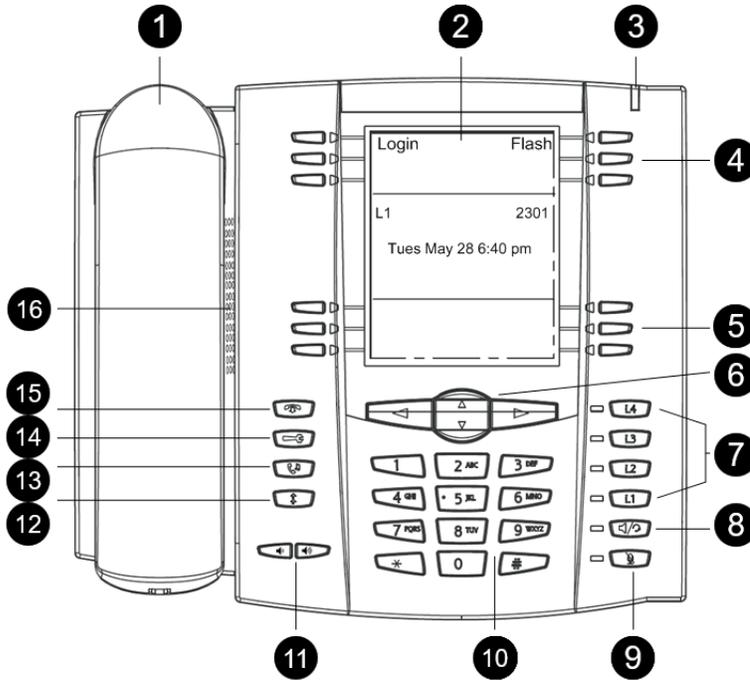
Key	Description	Key	Description
4	Directory key	15	Options key
5	Navigation keys and selection key	16	Hold key
6	Transfer key	17	Goodbye key
7	Conference key	18	Softkeys (bottom)
8	Callers List key	19	Info key
9	Redial key	20	Speakerphone
10	Line and call appearance keys L1 to L2 with LED	21	Softkeys T1-T20 (top) with LED
11	Speaker/headset key —		
	<ul style="list-style-type: none"> ◆ Activates and deactivates open listening ◆ Activates and deactivates the handset microphone ◆ Activates and deactivates the headset microphone 		

The image below provides the layout of the Mitel 6867i SIP Phone with the Mitel M685i Expansion Module.



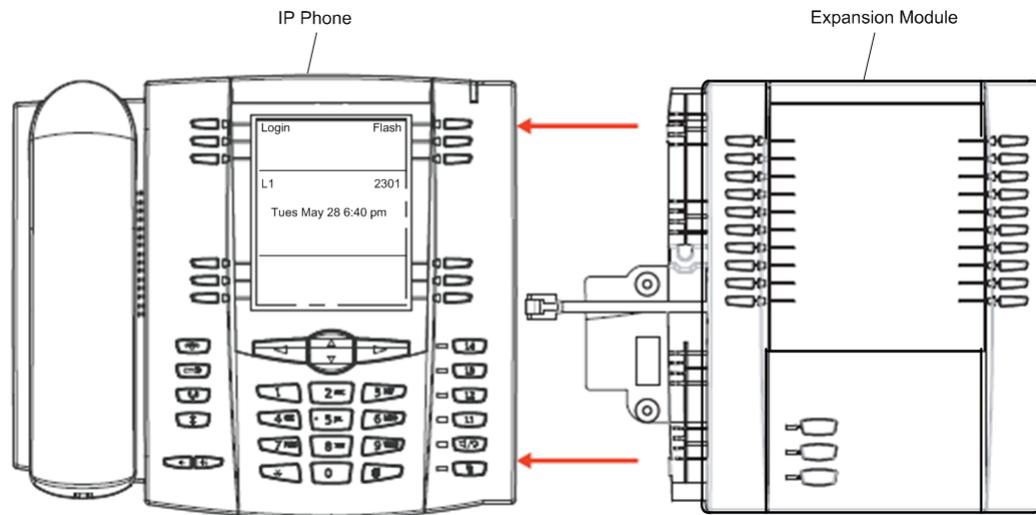
Mitel 6737i/6757i

The image below provides a layout of the of the Mitel/Aastra 6737i /6757i IP phone. For key descriptions, refer to the Mitel/Aastra 6737i /6757i IP phone user guides on the Mitel Web site.



Key	Description	Key	Description
1	Mitel/Aastra 6737i/6757i handset	9	Mute key
2	Eleven line graphical LCD screen (144 x 128 pixels) with white backlight. It shows: <ul style="list-style-type: none"> ◆ Softkey labels ◆ Phone numbers, personal names 	10	Keypad
3	Message waiting lamp	11	Volume control
4	Softkeys (top)	12	Redial key
5	Softkeys (bottom)	13	Hold key
6	Navigation keys	14	Options key
7	Four line and call appearance keys	15	Goodbye key
8	Speakerphone and headset key	16	Speakerphone

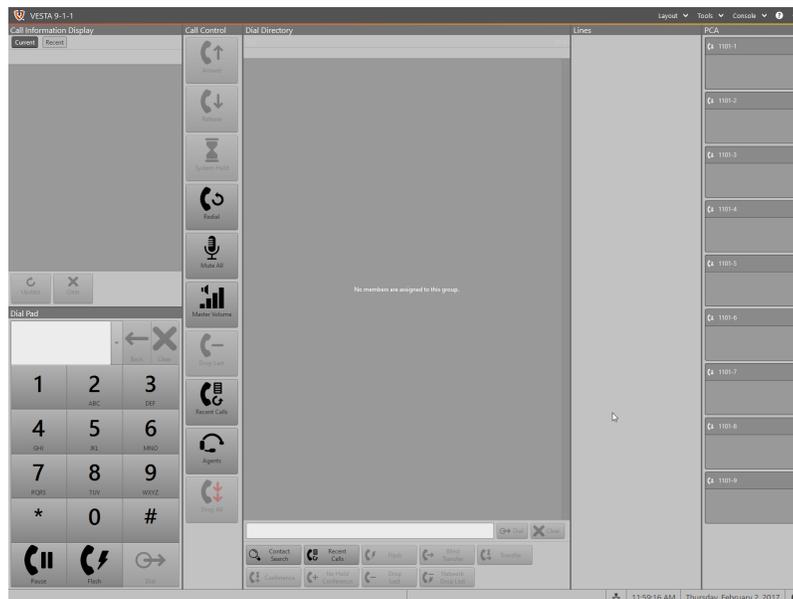
The image shows the layout of the Mitel/Aastra 6737i /6757i IP phone with the Mitel/Aastra M675i Expansion Module.



Enhanced Soft Phone

An Enhanced Soft Phone is used to process emergency and administrative calls. It is associated with a specific role.

The following image shows the layout of the Enhanced Soft Phone. It contains a sub-set of the features that are familiar to VESTA 9-1-1 users, such as a Call Information Display window, toolbar buttons, Dial Directory, call appearances, and so on.



When you log on to the Enhanced Soft Phone with a user name and password, you can:

- ◆ Answer a Emergency (9-1-1) call
- ◆ View and clear the location information of the caller
- ◆ Manually request location information retransmit during a call
- ◆ Place and retrieve calls on local hold
- ◆ Transfer calls

VESTA 9-1-1 Product Guide

- ◆ Create conference calls
- ◆ Access [SCA](#) lines
- ◆ Access the VESTA 9-1-1 speed dial directory
- ◆ Use Silent Monitor on calls
- ◆ Barge-In on (Join) calls
- ◆ Access recent calls

The buttons for each of these features look and perform the same as those in the VESTA 9-1-1 consoles.

Enhanced Soft Phones do not have access to the following features:

- ◆ Priority Abandoned Callback
- ◆ Automatic Abandoned Call Distribution
- ◆ Voice Mail
- ◆ [IRR](#)
- ◆ Manual Request of Location Information
- ◆ Incorrect Location Information

List of topics

- ◆ [Console features overview](#)
- ◆ [Console workspace](#)
- ◆ [Containers](#)
- ◆ [Voice call appearances](#)
- ◆ [Call information](#)
- ◆ [Voice call taking features](#)
- ◆ [Text call features](#)
- ◆ [Call distribution features](#)
- ◆ [Dialing features](#)
- ◆ [Event notifications](#)
- ◆ [Audio features](#)
- ◆ [Greetings Manager](#)
- ◆ [TTY window](#)
- ◆ [Supervisory features](#)
- ◆ [Console information](#)
- ◆ [Switch](#)
- ◆ [Web browsing](#)
- ◆ [Call information transfer](#)

Console features overview

Console features enable telecommunicators to perform their daily voice and text call taking activities, such as receiving and placing calls, looking up and contacting emergency responders and other call center staff, transferring and conferencing calls, and handling caller information. These features form the core functions of the console.

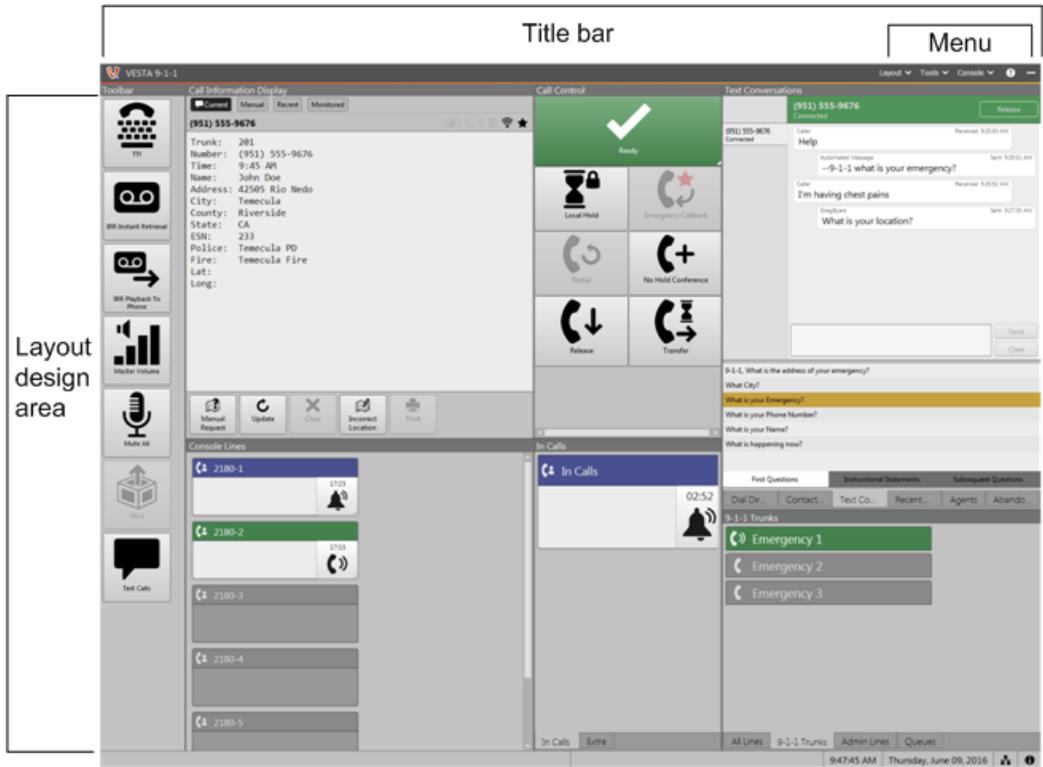
Console workspace

The console is a software application that lets a telecommunicator send and receive voice and text calls and perform essential emergency response actions with a keyboard and mouse or touch screen. The console is configurable to the needs of the emergency response center and telecommunicator roles.

The console is comprised of static parts, such as the title bar, and of the fully-configurable layout design area.

Component	Description	Details
Title bar	<ul style="list-style-type: none"> ◆ Displays the name of the system. ◆ Can contain menus for a telecommunicator and administrator depending on the log on permissions of the user. ◆ Can contain the Open, Close, and Minimize buttons, depending on the configuration. 	

Component	Description	Details
Menu	Contains menus for modifying the console, logging on and off, and accessing online Help. The available menu items depend on user permissions.	<ul style="list-style-type: none"> ◆ Layout menu options let users create, modify, open, delete, save layouts, and save layouts as templates. For example, from the Manage Layouts option, telecommunicators can choose a layout assigned to the role that they log in with. Some Layout menu items are available only to administrators who are logged on to the console with the Enable Customization permission, which is set in Data Distribution Service (DDS) Configurator. These options enable the addition of containers and assets, the configuration of assets, and other layout design features. ◆ Tools menu options are Event Notifications, Contact Manager (Enable Customization permission only), and Greetings Manager. ◆ Console menu options let users log on and log off and contains an About button that displays version and build information about the VESTA 9-1-1 system and its product components. ◆ ? offers Help topics to a telecommunicator
Layout design area	Contains the area for adding containers and user interface assets.	<ul style="list-style-type: none"> ◆ Title bar buttons ◆ Windows ◆ Containers ◆ Status bar buttons ◆ Messages



The *VESTA 9-1-1 Administrator Guide* contains detailed descriptions and procedures for creating, modifying, and saving layouts.

Console layouts

A console layout organizes the screen assets that the telecommunicator uses to answer calls, pick up text calls, place calls, contact other telecommunicators, transfer calls, create conference calls, and display call information, among others.

Administrators can design the layout by choosing the assets and their characteristics, such as size, placement, features, and color. These assets are organized using containers that can be placed on the screen. Multiple containers can be organized in a single container area, each of which can be opened by clicking a tab. Windows can be added to the layout for specific functions, such as listing contacts, listing other telecommunicators, displaying call and system information, and dialing numbers. The design of console interface can be saved and modified as a layout. A telecommunicator can access multiple layouts based on their roles.

The table below lists and describes the interface elements that are commonly found in a layout.

Asset	Description	Examples
Buttons	Buttons are layout assets that perform call taking functions — functions include acting on calls, changing the status of a telecommunicator for call distribution, and transferring calls.	<ul style="list-style-type: none"> ◆ Answer ◆ Audio 1 and Audio 2 ◆ Mute All ◆ Network Conference ◆ Ready/Not Ready

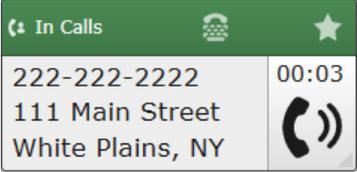
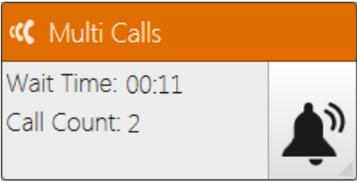
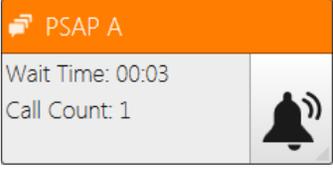
Asset	Description	Examples
	Buttons that display windows — windows that provide information about the console and windows that provide call taking information and let you perform call taking actions.	<ul style="list-style-type: none"> ◆ Abandoned Calls ◆ Agents ◆ Call Information Display ◆ Contact Search ◆ Recent Calls
	External Application buttons — Launch applications outside the console	<ul style="list-style-type: none"> ◆ Keyboard ◆ This button lets a user make the application visible on top of the console without having to minimize the console.
Call appearance	Call appearances let a telecommunicator answer, place, and act on administrative and emergency calls.	<ul style="list-style-type: none"> ◆ Personal Call Appearance—voice calls ◆ In Calls Appearance—voice calls ◆ Shared Call Appearance—voice calls ◆ Multiple Call Appearance—voice calls ◆ Text Multiple Call Appearance—text calls ◆ Multi Calls—voice calls
Containers	A container is a self-contained interface item that can contain call appearances, buttons that are used for call-taking tasks, and buttons that launch console windows.	<ul style="list-style-type: none"> ◆ Free form ◆ Scrollable grid ◆ Toolbar
Windows	A window can be docked with other windows or containers or docked on the main workspace. A hidden docked window is displayed by clicking its tab. Windows are customizable from the administrator's Preferences window to contain buttons and lists of entries.	<ul style="list-style-type: none"> ◆ Abandoned Calls ◆ Agents ◆ Call Information Display ◆ Customer Branding ◆ Date ◆ Dial Pad ◆ Information ◆ Master Volume ◆ Recent Calls ◆ Text Calls ◆ Text Conversations ◆ Time ◆ TTY

Asset	Description	Examples
Status bar	The right side of the status bar can contain status bar buttons that open a panel that displays information and fields that display the time and date. The left side of the status bar displays messages.	<ul style="list-style-type: none"> ◆ Time ◆ Date ◆ Connectivity ◆ Information

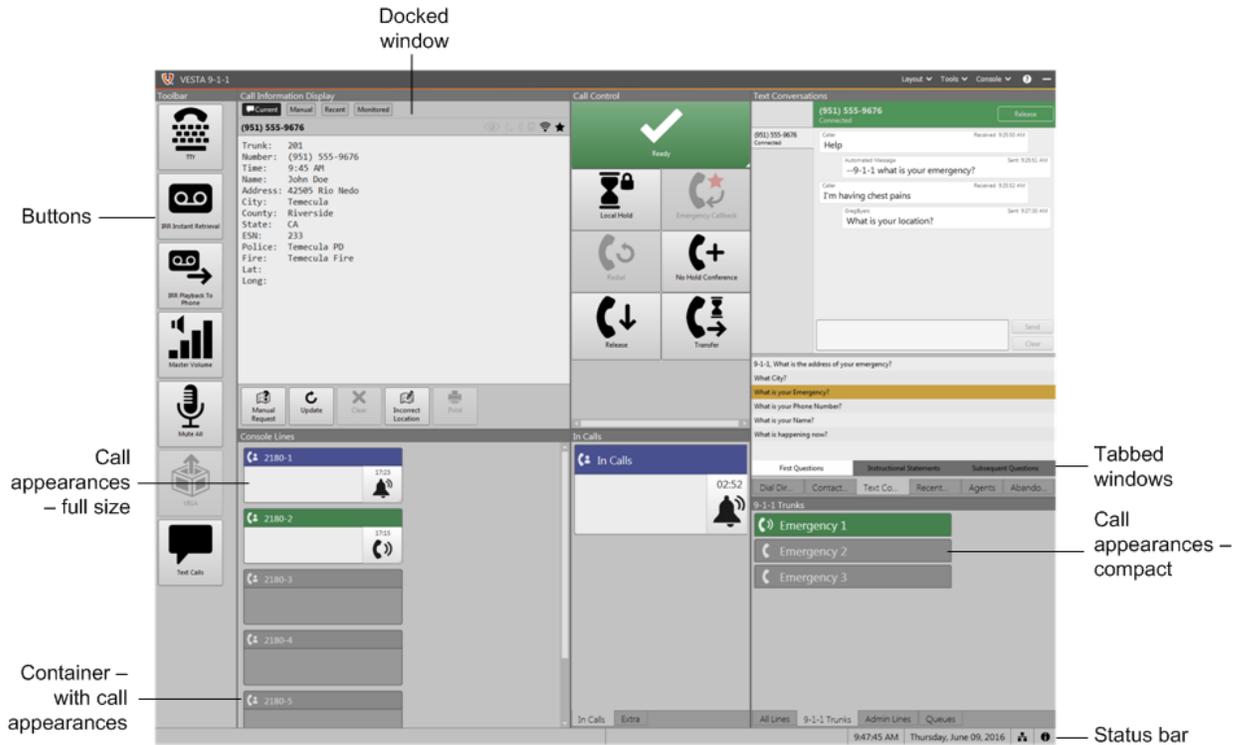
The following table lists and describes the types of voice call appearances you can use to answer a call on the console. Each example shows the **Connected** icon on the call appearance in both full and compact view.

Voice call appearance type	Description	After the call is answered or picked up
Personal Call Appearance (PCA)	After you answer a call on any call appearance type except the ICA, the PCA is connected and all call handling functions become available. The color of the call appearance changes with the change of state: for example, from ringing to answered.	
Shared Call Appearance (SCA)	Picking up a call on an SCA moves it to the PCA for handling. The SCA shows the line in a locally connected state. The SCA can also show a call being processed by the Pocket Dial Filter.	  

Pocket dial filtering mode

Voice call appearance type	Description	After the call is answered or picked up
In Calls Appearance (ICA)	<p>Calls arriving from ACD can be received on the ICA if it is mapped to the console. When a call is active on the ICA, no ACD calls are presented to the console. Depending on the console configuration, the ICA can be put offline when an administrative or emergency call is active on a PCA and when a text call is being managed on the console.</p> <p>Clicking Move to PCA on the ICA expander moves the call to a PCA and makes the ICA available for new calls. You handle the call on the PCA.</p>	
Multiple Call Appearance (MCA)	<p>MCAs display the call count and the wait time of the oldest call for individual administrative and emergency call queues. When you answer a call on an MCA, the call moves to the PCA where you handle the call. When there are no more calls in the queue, the MCA returns to its idle state. There is no connected state on an MCA because the call connects on the PCA.</p>	 <p>MCA in Idle state</p>
Multi-calls	<p>Answers the oldest voice call from the highest priority MCA.</p>	
Text call appearance type	Description	After the call is answered or picked up
Text Multiple Call Appearance (text MCA)	<p>Displays the call count and wait time of the oldest text call on the text queue.</p>	

The following example shows a design of a layout. Besides call taking assets, the layout can contain design elements such as branding and non-call functions such as providing the time.



Related Links

- [Agent roles](#) on page 179
- [Console shortcuts](#) on page 47

Layout management

Templates and layouts

Users can create a customized layout from a template, either supplied with VESTA 9-1-1 or based on a user-created layout. The supplied templates are the default template, and two templates for consoles receiving text calls:

- ◆ Default standard template — The default template layout contains the following settings:
 - ◆ All configurable options are set to default (viewable in the **Preferences** dialog box).
 - ◆ All console windows are closed.
 - ◆ The size of the console layout is maximized to fit the screen of your monitor.
- ◆ Default **SMS narrow** and **SMS wide** templates — These templates can be used for consoles that receive text calls.
- ◆ **Softphone** — The Enhanced Soft Phone Console layout contains a restricted set of call-taking features that can be used to process emergency and administrative calls.
- ◆ **VESTA** — The configurable layout contains a basic subset of VESTA 9-1-1 features.
- ◆ User-created template based on a user layout — A user-created template can standardize the creation of layout based on the requirements of a call center or agency.

Before you create a layout, consider the following:

- ◆ The number of different console layouts that are required.
- ◆ The types of containers, windows, and call appearances that will be part of a layout.

- ◆ Which layouts will be assigned to which roles.
- ◆ The names of the layouts. A layout should be given a name that clearly indicates its purpose, for example, **911CallTaker_SouthZone**. You can create as many layouts as are required, but each layout must have a unique name. You can save a copy of a layout under a different name and you can rename and delete layouts.

Roles and layouts

To make a layout available to a telecommunicator, you must assign the layout to a role. When you assign layouts to roles, you can assign a layout to all roles or you can select the roles to which the layout is assigned. You can also assign a layout to no roles to prevent a telecommunicator from using a layout.

Layouts that are assigned to a role are not deleted when you delete a role. Layouts are not shared between agencies.

Console shortcuts

Two types of shortcut scopes are available:

- ◆ **Application** — These shortcuts are available only when the console has focus. An application scope shortcut does not work if the keyboard focus is set to a text box that is part of a console asset.
- ◆ **System** — These shortcuts are available system wide. If the console is minimized or another application has the focus, the shortcut invokes a console feature. A system scope shortcut works if the keyboard focus is set on a text box.

Administrators can customize shortcuts in the **Preferences** window.

When you change the shortcut scope from Application to System, the system checks for shortcuts that are not allowed and unassigns them.

You can invoke a shortcut from the following devices:

- ◆ Keyboard
- ◆ Genovation keypad

Shortcuts are organized by category tabs, as shown in the following table:

Tab	Description
All	Displays a complete list of items to which shortcuts can be assigned.
Call Control	Displays a list of buttons that let you perform actions on a call.
Contacts	Displays a list of contacts to which shortcuts can be assigned.
Dialing	Lists the callback and redial buttons.
IRR	Lists the IRR Instant Retrieval and the IRR Voice Monitor buttons.
Session	Lists the Ready/Not Ready , the Log off , and the Exit buttons.
Text	Lists the Text Calls and the Text Conversations buttons.
Volume and Audio	Displays a list of buttons that control audio volume.
Window	Displays a list of windows to which shortcuts can be assigned.

Table 1: Application scope — available keys

Key	Examples
0 through 9 and * #!	CTRL or ALT+9 CTRL+ALT+9, CTRL+SHIFT+9, ALT+SHIFT+9 CTRL+ALT+SHIFT+9
A through Z	CTRL or ALT+A CTRL+ALT+A, CTRL+SHIFT+A, ALT+SHIFT+A CTRL+ALT+SHIFT+A
@ \$ % ^ & ()	CTRL or ALT+@ CTRL+ALT+@, CTRL+@, ALT+@ CTRL+ALT+@
-_+= [] \ ? / < . , ~ ,	CTRL or ALT+= CTRL+ALT+=, CTRL+SHIFT+=, ALT+SHIFT+= CTRL+ALT+SHIFT+=
Backspace	SHIFT or ALT or CTRL+Backspace CTRL+Backspace, ALT+Backspace, SHIFT + Backspace CTRL+ALT+Backspace, CTRL+SHIFT+Backspace, ALT+SHIFT +Backspace CTRL+ALT+SHIFT+Backspace
Delete	SHIFT or ALT or CTRL+Delete CTRL+Delete, ALT+Delete, SHIFT + Delete CTRL+ALT+Delete, CTRL+SHIFT+Delete, ALT+SHIFT+Delete CTRL+ALT+SHIFT+Delete
Enter	SHIFT or ALT or CTRL+Enter CTRL+Enter, ALT+Enter, SHIFT + Enter CTRL+ALT+Enter, CTRL+SHIFT+Enter, ALT+SHIFT+Enter CTRL+ALT+SHIFT+Enter
Tab	SHIFT or ALT or CTRL+Tab CTRL+Tab, ALT+Tab, SHIFT+Tab CTRL+ALT+Tab, CTRL+SHIFT+Tab, ALT+SHIFT+Tab CTRL+ALT+SHIFT+Tab
Space	SHIFT or ALT or CTRL+Space CTRL+Space, ALT+Space, SHIFT + Space CTRL+ALT+Space, CTRL+SHIFT+Space, ALT+SHIFT+Space CTRL+ALT+SHIFT+Space

Key	Examples
Insert	SHIFT or ALT or CTRL+Insert CTRL+Insert, ALT+Insert, SHIFT + Insert CTRL+ALT+Insert, CTRL+SHIFT+Insert, ALT+SHIFT+Insert CTRL+ALT+SHIFT+Insert
Esc	SHIFT or ALT or CTRL+Esc CTRL+Esc, ALT+Esc, SHIFT+Esc CTRL+ALT+Esc, CTRL+SHIFT+Esc, ALT+SHIFT+Esc CTRL+ALT+SHIFT+Esc
Paging: Home, End, Page up, Page down	SHIFT or ALT or CTRL+Home CTRL+Home, ALT+Home, SHIFT+Home CTRL+ALT+Home, CTRL+SHIFT+Home, ALT+SHIFT+Home CTRL+ALT+SHIFT+Home
Arrows: Left, Right, Up, Down	SHIFT or ALT or CTRL+Up CTRL+Up, ALT+Up, SHIFT+Up CTRL+ALT+Up, CTRL+SHIFT+Up, ALT+SHIFT+Up CTRL+ALT+SHIFT+Up
F1 through F24	F1 CTRL+F1, ALT+F1, SHIFT+F1 CTRL+ALT+F1, CTRL+SHIFT+F1, ALT+SHIFT+F1 CTRL+ALT+SHIFT+F1
Right mouse button click	Right mouse click SHIFT or ALT or CTRL+Right mouse click CTRL+Right mouse click, ALT+Right mouse click, SHIFT+Right mouse click CTRL+ALT+Right mouse click, CTRL+SHIFT+Right mouse click, ALT+SHIFT+Right mouse click CTRL+ALT+SHIFT+Right mouse click
Middle mouse button click	Middle mouse button click SHIFT or ALT or CTRL+Middle mouse button CTRL+F1, ALT+F1, SHIFT+F1 CTRL+ALT+Middle mouse button click, CTRL+SHIFT+Middle mouse button click, ALT+SHIFT+Middle mouse button click CTRL+ALT+SHIFT+Middle mouse button click

Table 2: System scope — available keys

Key	Examples
Combinations of 0 through 9 and * # !	CTRL or ALT+9 CTRL+ALT+9, CTRL+SHIFT+9, ALT+SHIFT+9 CTRL+ALT+SHIFT+9
Combinations of A through Z	CTRL or ALT+A CTRL+ALT+A, CTRL+SHIFT+A, ALT+SHIFT+A CTRL+ALT+SHIFT+A
Combinations of @ \$ % ^ & ()	CTRL or ALT+@ CTRL+@, ALT+@ CTRL+ALT+@
Combinations of — _ += [] \ ? / < . ~ `	CTRL or ALT+= CTRL+ALT+=, CTRL+=, ALT+= CTRL+ALT+=
Combinations of Backspace and modifier	SHIFT or ALT or CTRL+Backspace CTRL+Backspace, ALT+Backspace, SHIFT + Backspace CTRL+ALT+Backspace, CTRL+SHIFT+Backspace, ALT+SHIFT+Backspace CTRL+ALT+SHIFT+Backspace
F1 through F24	F1 CTRL+F1, ALT+F1, SHIFT+F1 CTRL+ALT+F1, CTRL+SHIFT+F1, ALT+SHIFT+F1 CTRL+ALT+SHIFT+F1

Related Links

[Console layouts](#) on page 42

Containers

A container is a customizable, self-contained interface item on which you can place assets such as call appearances, buttons that are used for call-taking tasks, and buttons that launch console windows.

The following container types are available:

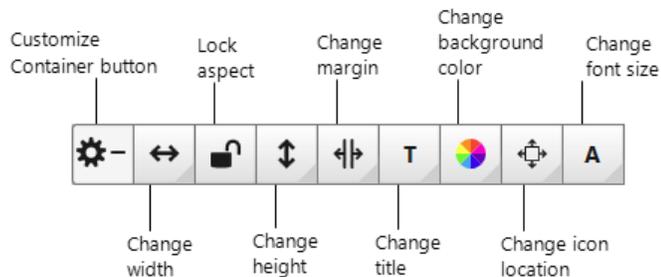
- ◆ **Toolbar** — Can contain buttons that open windows and buttons that permit call-taking actions; assets can only be resized as a group.
- ◆ **Scrollable grid** — Can contain buttons that permit call-taking actions and call appearances; assets can only be resized as a group.
- ◆ **Free-form grid** — Can contain buttons that permit call-taking actions and call appearances; assets can be resized individually.

The **Layout Assets** dialog box, which categorizes assets by container type, lets you access all assets that you can map to a container.

Containers can be distinguished by the type of asset they can contain, among other things:

Container property	Toolbar	Scrollable grid	Free-form grid
Contain call appearances		✓	✓
Contain buttons to perform actions on a call	✓	✓	✓
Contain buttons that open windows	✓		
Contain placeholder buttons	✓	✓	
Each asset can be independently sized			✓
Each asset can be independently placed			✓
Pin and unpin container	✓		
Displays horizontal scroll bar			✓
Displays vertical scroll bar	✓	✓	✓

The **Customize Container** toolbar lets you customize the appearance of the container and its assets.



The **Customize Container** toolbar provides the following options for a container type:

Customization	Toolbar	Scrollable grid	Free-form grid
 Change width	✓	✓	
 Lock Aspect — lets you change height and width of assets concurrently.	✓	✓	
 Change height	✓	✓	
 Change margin between assets	✓	✓	

Customization	Toolbar	Scrollable grid	Free-form grid
 Change title	✓	✓	✓
 Change background color of container	✓	✓	✓
 Change icon location	✓	✓	✓
 Change font size	✓	✓	✓

Voice call appearances

Call appearances for voice let a telecommunicator answer, place, and act on administrative and emergency calls. The layout design determines which call appearances are available on the console. Call appearance types have different call handling functionalities. For instance, the call appearance on which a call is answered might not be the one used to carry out call taking activities, such as transfers, conferences, and holds.

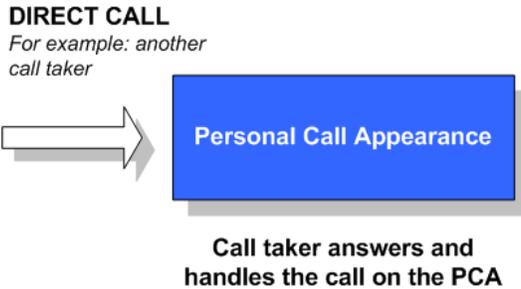
Call appearance types for voice calls are:

- ◆ **Personal Call Appearance (PCA)**—Each console has its own PCA. Consoles can have up to 10 PCAs. The number of PCAs determines the number of calls a console can handle or conference at a time.
- ◆ **Shared Call Appearance (SCA)**—Visible on any console with the SCA configured on the layout. SCAs are lines and trunks.
- ◆ **In Calls Appearance (ICA)**—Each console has its own ICA, which receives ACD calls.
- ◆ **Multiple Call Appearance (MCA)**—Visible on any console with the MCA configured on the layout. It receives calls from repositories of calls (queues) mapped to the console.
- ◆ **Multi Calls**—Answers the oldest call from the highest priority MCA. An MCA is used to answer calls in Priority Queues.

This section describes some basic ways by which voice calls can arrive on the console and the types of call appearances that telecommunicators can use to answer and handle calls. How calls arrive on the console depends on the layout and configuration of the system.

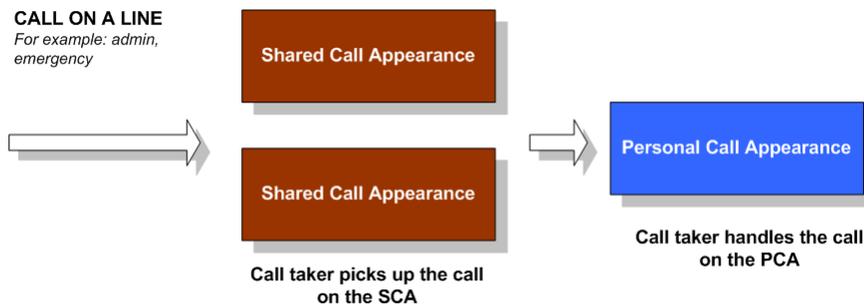
Direct to PCA

The calling party (such as another telecommunicator) dials the extension of the console and the call rings on the [PCA](#).



From a mapped line to an SCA

Calls can arrive on a **SCA** that is mapped to a line: for example, a line for emergency calls, a line for administrative calls, and so on. Calls can be answered by any telecommunicator with the SCA and handled on the PCA of the answering telecommunicator.



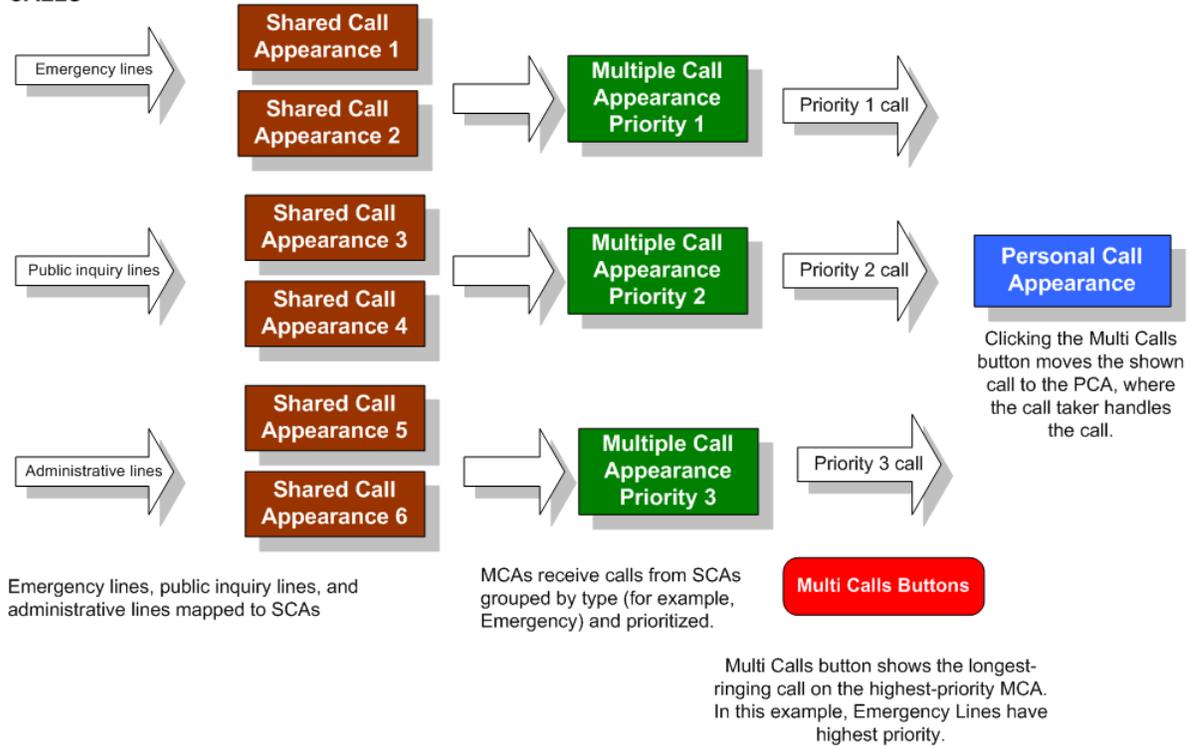
Calls arriving on an MCA

MCAs can represent multiple SCAs grouped by line type or by different line types. An MCA displays the total number of calls and the waiting time of the longest-ringing call on a group of SCAs. Two or more MCAs can be ranked according to the importance of the calls that arrive on its SCAs. Using this ranking, a **Multi Calls** button displays the longest waiting time of a call on the highest-priority MCA. The button ensures that a telecommunicator always answers the longest ringing and highest priority call.

In the following example, Emergency, Public Inquiry, and Administrative lines are mapped to SCAs on the console. Each type of line is grouped by an MCA: that is, an MCA for emergency calls, an MCA for public inquiry calls, and an MCA for administrative calls. Each MCA is given a priority ranking with your emergency line given the highest priority. The **Multi Calls** button displays the longest ringing call in the following order: Emergency, Public Inquiry, Administrative.

After the call is answered, the call moves to the PCA where the telecommunicator handles it.

MULTIPLE CALL APPEARANCE CALLS

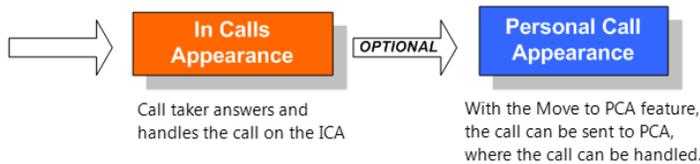


If the **Multi Calls** button is not configured on the console, the telecommunicator can answer the call directly on an MCA.

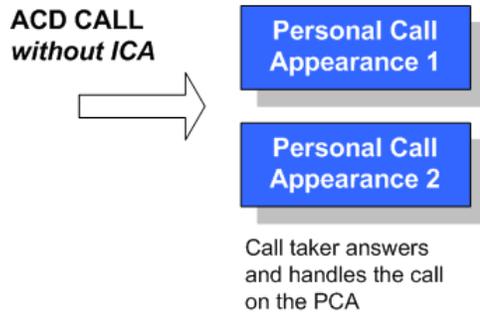
ACD calls

Calls automatically distributed to telecommunicators can arrive on the ICA, where the call can be acted on with transfer, conference, and hold features. A telecommunicator can click the **Move to PCA** button on the expander of the ICA to move the call to the first available PCA where it can be handled. The ICA is then freed to receive an ACD call. The example shows that the **Move to PCA** feature is used to move the call to a PCA.

ACD CALL



An ACD call can arrive on a PCA without an ICA.



Related Links

[In Calls Appearance](#) on page 58

[Personal Call Appearance](#) on page 55

[Shared Call Appearance](#) on page 60

[Multiple Call Appearance and Multi Calls button](#) on page 63

Personal Call Appearance

The [PCA](#) enables telecommunicators to answer administrative calls and emergency calls that arrive from other consoles, phones, and [ACD](#). A telecommunicator can also make calls from the workstation using the PCA. One PCA is used for every participant added to a conference call.



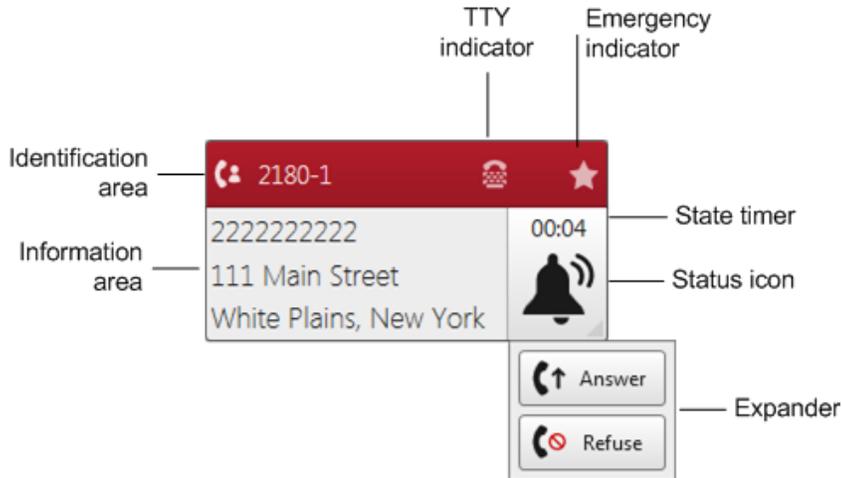
Note

If the console user is already on an active call, the audible notification only occurs on the console when it is configured to do so.

The PCA is neither shared nor visible at other positions. When a call arrives on a line, all call takers can see and hear the ringing line depending on the configuration of notifications on the console. However, the PCA resource becomes active only on the console that receives the call.

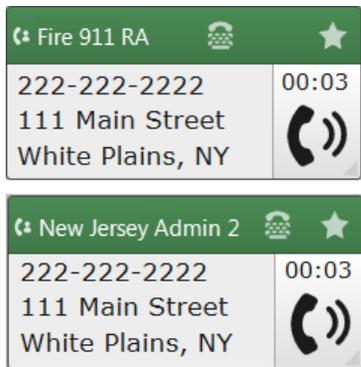
A workspace can have a maximum of 10 PCAs. Each PCA has the following parts:

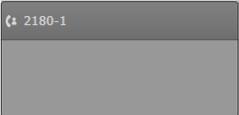
- ◆ **Identification area** displays the extension of the current console or the telecommunicator. The area changes color according to the state of the call: that is, idle, ringing, answered, and any hold. You can click this area to answer a ringing call. When an emergency call arrives on the PCA, the area turns red. Administrative calls change the color of the PCA to purple. The area also shows one or both of the following indicators:
 - ◆ **Emergency** — For the duration of an emergency call, the PCA displays a star-shaped indicator.
 - ◆ **TTY** — For the duration of a [TTY](#) call, the PCA displays a receiver/keyboard-shaped indicator.

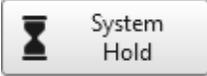


- ◆ **Information area** can show information about the console, the agent, and the call (such as the extension of a console), the extension and name of a telecommunicator, the name and number of the calling party for an administrative call, the [automatic number identification \(ANI\)](#), a [VDN](#) (dialed for a queue or supervisor), current elapsed time of a call, or the concise location information of an emergency call. If the location information of the PCA call appears in the Call Information Display, a call information indicator appears in the area. The name of the line associated with a call can be displayed on the call appearance.
- ◆ **State timer** displays the current status of the PCA. The timer resets to zero on the change of status.
- ◆ **Status icon** shows the state of the PCA resource. Selecting the icon opens an expander that displays the buttons for functions available given the current state of the resource: for example, ringing or connected.
- ◆ **Expander** contains **Call taking function buttons** which are contextual functions based on the state of the PCA.

The following images show examples of PCAs that display the name of the associated line:



State	Available features	Description
Idle	None	

State	Available features	Description
Ringing		
	 Answer	Answers a call when the PCA is in a ringing state
	 Refuse	Declines an incoming call.
Connected		
	 Flash	Activates a Flash functionality.
	 Local Hold	Puts the currently active call on local hold.
	 System Hold	Puts the currently active call on system hold.
	 Release	Releases the last-added party on a conference call.
	 Network Drop Last	Removes the last-added network party on a conference call.
	 Network Conference	Puts a network call into a conference.
Seized		
	 Release	Exits from the seized state.
Local Hold		
	 Retrieve	Retrieves the current local hold call.
System Hold		
	 Retrieve	Retrieves the current system hold call.

The call taking features available depend on the status of the PCA.

Related Links

[Voice call appearances](#) on page 52

In Calls Appearance

The **ICA** displays received voice calls from the **ACD** queue(s). The ICA displays the concise location information, **ANI**, or calling name, and number of the received call.

You cannot place a call from the **ICA**.

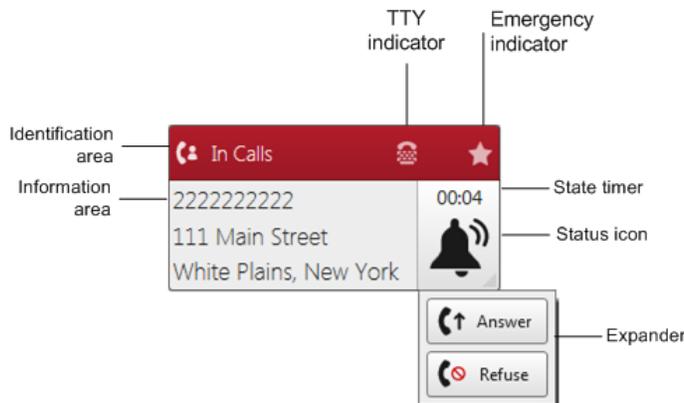
After a call is received on the ICA, the call can be moved to a local **PCA** where the call can be handled. The **Move to PCA** feature frees the ICA to receive another call from **ACD**.

The ICA can be configured to be offline when one of the following voice or text calls on the console:

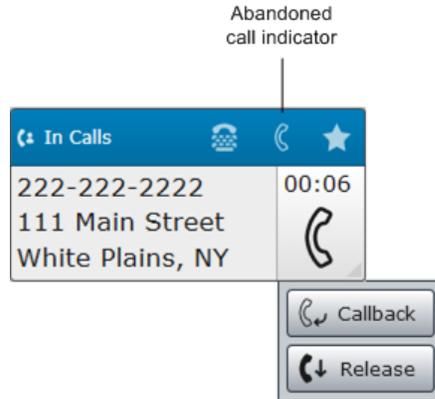
- ◆ Active emergency voice call on a PCA
- ◆ Active administrative voice call on a PCA
- ◆ Connected text call

Each ICA has the following parts:

- ◆ **Identification area** displays the In Calls label. The area changes color according to the status of the call: for example, when a call is answered. When an emergency call arrives on the ICA, the area turns red. Administrative calls change the color of the ICA to purple. You can click this area to answer the call. The area can show the following indicators:
 - ◆ **Emergency** — For the duration of an emergency call, the ICA displays a star-shaped indicator.
 - ◆ **TTY** — For the duration of a **TTY** call, the ICA displays a receiver/keyboard-shaped indicator.

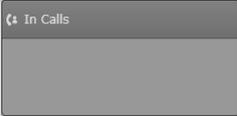


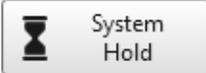
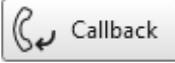
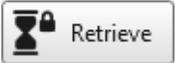
- ◆ **Abandoned** — For the duration of an abandoned call, the ICA displays the Abandoned call indicator and the Emergency indicator.



- ◆ **Information area** — It can show information about the caller, the call (for example, [calling party number \(CPN\)/ANI](#), concise location information), and queue and line names. The name of the line associated with a call can be displayed on the call appearance.
- ◆ **Status icon** opens an expander that displays the buttons for functions available in a particular state of the module: for example, ringing, connected.
- ◆ **State timer** displays the current status of the ICA. The timer resets to zero on the change of status.
- ◆ **Expander** contains the **Call taking function buttons** which are contextual functions by ICA status.

The call taking features available depend on the status of the ICA. The table below lists the possible ICA states and the features available to each of them.

State	Available features	Description
Idle 	None	
Ringing 	 Answer	Answers an ACD call when the ICA is in a ringing state. When an abandoned call appears, clicking the button takes ownership of the call.
	 Refuse	Refuses to answer the incoming call from ACD.
Connected 	 Local Hold	Places the currently-active call on Local Hold.
	 Flash	Activates a Flash functionality.

State	Available features	Description
	 System Hold	Puts the currently-active call on System Hold.
	 Move to PCA	Moves the call to a PCA and makes the ICA available for another ACD call. The call is put on Local Hold or System Hold, depending on the console settings.
	 Release	Ends the current call segment.
	 Network Conference	Puts a network call into a conference.
	 Network Drop Last	Releases the last-added call in a network conference
Abandoned		
	 Callback	Initiates dialing the number of an abandoned call on an available PCA.
	 Release	Ends the abandoned call.
Local Hold		
	 Retrieve	Retrieves the current local hold call.
System Hold		
	 Retrieve	Retrieves the current system hold call.

Related Links

[Voice call appearances](#) on page 52

Shared Call Appearance

SCAs can be emergency lines (inbound calls), administrative lines (inbound calls), Direct Access Administrative Lines (inbound and outbound calls), and Ringdown lines (inbound and outbound calls).

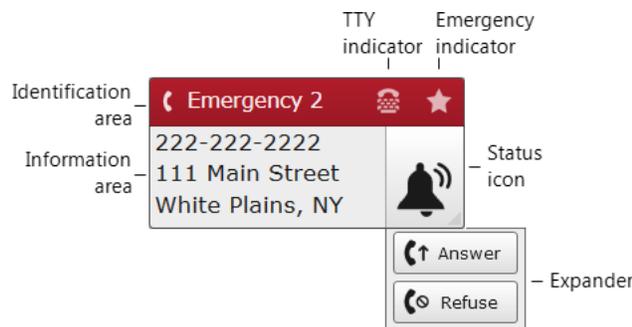
SCAs have the following properties:

- ◆ Any or all SCAs can be mapped to all layouts.

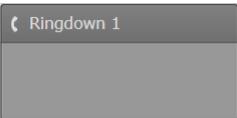
- ◆ Any telecommunicator can answer a call on an SCA.
- ◆ After the call is answered, the SCA state changes to connected, and an idle PCA changes to a connected state with all available features.
- ◆ All telecommunicators not participating on an SCA call can see the state of the line as active on another console.
- ◆ Depending on the system configurations, a telecommunicator not participating on an SCA call can join the call.
- ◆ The SCA on a console where a call has been put on system hold cannot be used on that console to pick up the call. The SCAs on other consoles (where the system was not initiated) can be used to pick up the call.

An SCA resource contains the following parts:

- ◆ **Identification area** displays configurable line description of the current workstation. The area changes color according to the state of the call: for example, idle, ringing, answered, any system hold. You can click this area to answer a ringing call. The area also shows one or both of the following indicators:
 - ◆ **Emergency** — For the duration of an emergency call, the SCA displays a star-shaped indicator.
 - ◆ **TTY** — For the duration of a TTY call, the SCA displays a receiver/keyboard-shaped indicator.



- ◆ **Information area** can show the extension of a workstation, the extension and name of a telecommunicator, the name and number of the calling party for an administrative call, ANI, or the concise location information of an emergency call.
- ◆ **Expander** contains the **Call taking function buttons**, which are contextual functions by SCA state.
- ◆ **Status icon** shows the state of the SCA resource. Selecting the icon opens an expander that displays the buttons for functions available given the current state of the resource: for example, ringing, connected.

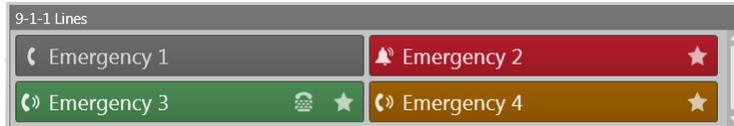
State	Available features	Description
Idle	None	 <p>Ringdown shown</p>

State	Available features	Description
Ringing 		Answers a call when the SCA is in a ringing state.
Connected 	Call controls on PCA only	
Connected Elsewhere 		Allows a telecommunicator to participate in an SCA call that is in progress elsewhere.
System Hold 		Retrieves the current system hold call.
Filtering Calls 		Call is on a line or trunk configured with Pocket Dial Filtering.
Off hook	The SCA is not actionable.	

The [SCA](#) can appear in the compact view in which only the Identification area appears. The same status icon and indicators appear on the compact view, and the Pickup, Select, Join, and Retrieve functions are invoked by clicking the Identification area.

The following example shows the compact format of four SCAs. They occupy less space than the full view by displaying only the Identification area. The four SCAs have the following states:

- ◆ Emergency 1 — Idle SCA. After the call appearance becomes active, the idle icon is replaced by a status icon, such as a Ringing status icon.
- ◆ Emergency 2 — Ringing emergency call. The call can be picked up by clicking the SCA.
- ◆ Emergency 3 — Active emergency [TTY](#) call.
- ◆ Emergency 4 — Emergency call active on another console.

**Note**

A telecommunicator cannot join an SCA by clicking the Identification area in the full version of the SCA. Joining an SCA by clicking the Identification area is available only in the compact version.

Related Links

[Voice call appearances](#) on page 52

[Move to PCA](#) on page 80

[Join](#) on page 78

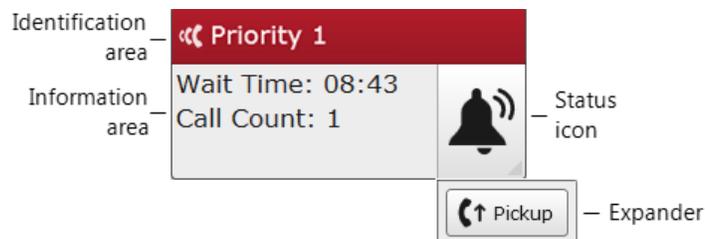
Multiple Call Appearance and Multi Calls button

The **MCA** is a representation of a queue of calls. Each MCA has a system level priority assigned from 1 to 10.

Any or all MCAs can be mapped to a layout. Answering an MCA connects the call to a PCA on the console.

The MCA has the following parts:

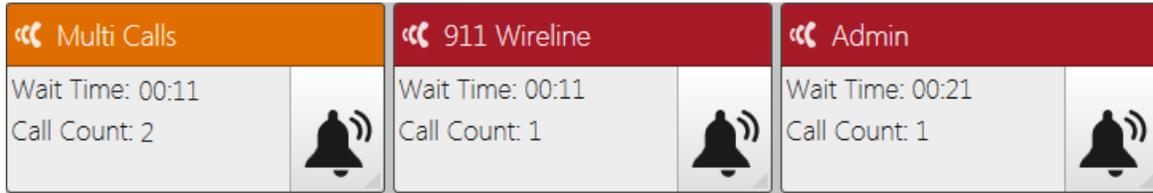
- ◆ **Identification area** displays configurable line description of the call queue.
- ◆ **Information area** displays:
 - ◆ **Call Count** — displays the number of ringing calls for the queue
 - ◆ **Wait Time** — displays the elapsed time of the longest-ringing call on the priority queue
- ◆ **Status icon** opens an expander that displays the buttons for functions available in the particular state of the module.
- ◆ **Expander** contains the call taking function buttons that contain contextual functions by MCA state.



The **Multi Calls** button shows:

- ◆ **Call Count** — the total number of calls in all the priority queues mapped to the workstation
- ◆ **Wait Time** — the elapsed time of the longest-ringing call for the highest-priority queue mapped to the workstation

For example, Priority 1 has the priority ranking 1, and Priority 2 has priority ranking 2. A call arrives on the mapped Priority 2 MCA. Some seconds later, another call arrives on Priority 1. A telecommunicator can answer a call in any priority queue, but the ringing time of the queue with the highest priority is shown in the **Multi Calls** button.



Related Links

[Voice call appearances](#) on page 52

[Move to PCA](#) on page 80

Call information

Call information is location and supplemental information of a voice or text call. The location information of a wireline call is extracted from a database based on the calling party number (called the [ANI](#)) and then sent to the workstation interface in the **Call Information Display**, a [PCA](#), or an [SCA](#). A telecommunicator can dispatch emergency services using the location information of the caller.

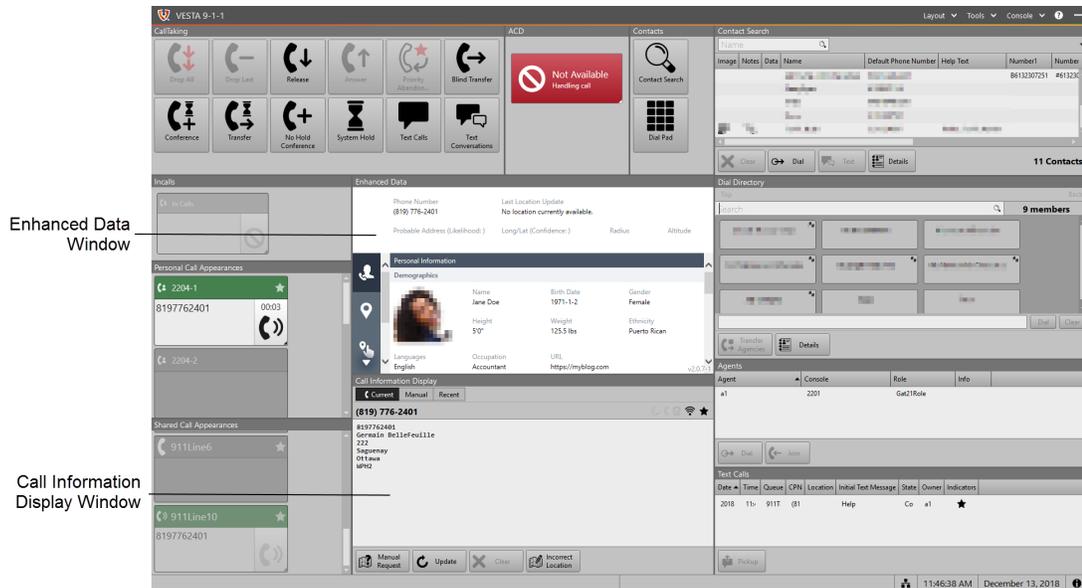
The following example shows the street number and calling number in three lines on a PCA.



When a call originates from a cellular phone, the [pseudo-automatic number identification \(pANI\)](#) is displayed on the workspace. The pANI is the wireline number of the cell tower receiving the transmission from the caller, which is used to identify the cell sector of the originating call.

A telecommunicator can display supplemental personal, medical, and location information of emergency callers in the **Enhanced Data** window. The information is queried from a third-party data provider based on the caller’s [CPN](#). Emergency call centers can use the additional data to direct first-line responders.

The following diagram shows the **Enhanced Data** window (with caller information) above the **Call Information Display** window (with location information).



Related Links

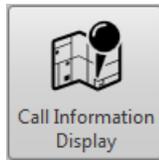
- [Location information configuration](#) on page 172
- [Call Information Display window](#) on page 65

Call Information Display window

The **Call Information Display** window displays calling-party information for an active call or the last active call, such as name, telephone number, address, and trunk. Information for voice calls and for text calls can be displayed. The window can be customized by using the **Preferences** dialog box.

The **Call Information Display** window can be available in a layout in the following ways:

- ◆ An open window.
- ◆ On a toolbar, as a button that opens the window.



- ◆ As a shortcut that opens the window.

Windows that are opened from a toolbar button can be resized and moved, but cannot be docked.

Call information for the following can be displayed:

- ◆ ACD emergency calls
- ◆ Abandoned calls
- ◆ Emergency and admin voice calls, during a text call or when the console is idle
- ◆ Monitored calls
- ◆ Abandoned callbacks
- ◆ Emergency callbacks
- ◆ Recent calls

- ◆ Manually requested call information
- ◆ Current and previous wireless, wireline, and i3 calls
- ◆ Text calls

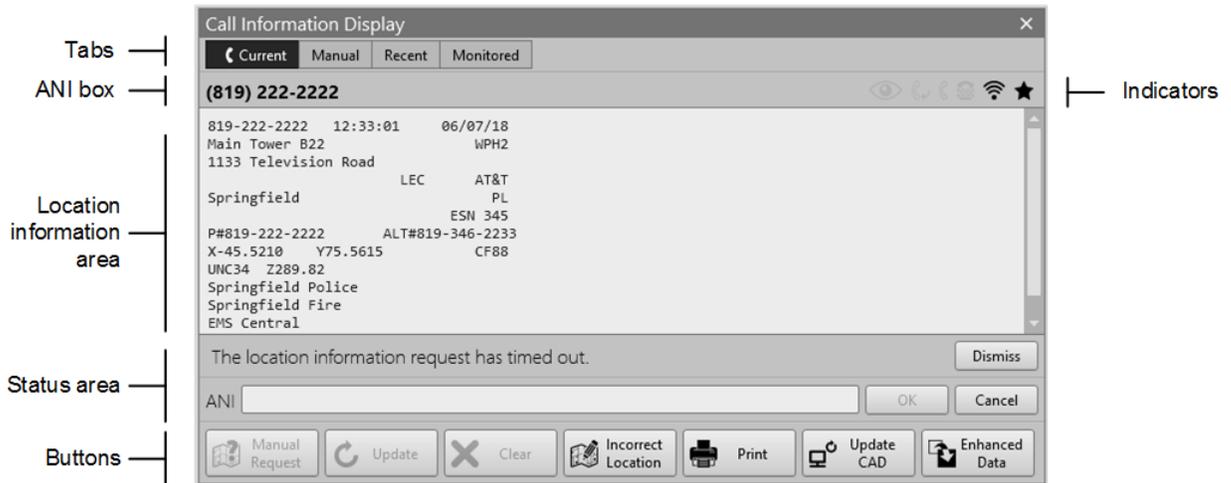
The **Call Information Display** window contains features that let you perform the following actions:

- ◆ Manually Request location information based on a phone number
- ◆ Request updated location information
- ◆ Clear location information that is displayed in the window
- ◆ Print displayed location information in the form of a report
- ◆ Create an **Incorrect Location Information Report**

The Call Information Display window can contain the assets and customizations that are listed in the following table.

Call Information Display — Assets and Preferences	Description
Button Image Location list	Controls the location of the image that appears on the buttons of the CID window. Default location = Image on Left
Button Font Size list	Controls the size of the font that appears on the buttons of the CID window. Default size = 9
Clear button	Clears the location information from the tab whose content is visible.
Enhanced Data button	Displays the Enhanced Data window. The button appears in the Current tab of the Call Information Display window.
Incorrect Location button	Submits an Incorrect Location Information Report . The report captures incorrect location information data from the visible tab, corrections, and reasons for the incorrect information. The agent role with which the user logged on to the console must be configured with the permission to create an ILIR in order for this feature to be available.
Manual Request button	Requests location information for a phone number that you enter, which is then displayed in the Call Information Display window on the Manual tab. Error and status messages for manual requests display for 5 seconds in the status panel. Messages can be cleared prior to the timeout by clicking the status panel.
Print button	Prints location information for a call from the tab whose content is visible.
Update button	Issues a single request to the server to retransmit location information for the current call. The results are shown on the Current tab

Call Information Display — Assets and Preferences	Description
Update CAD button	Updates the CAD system for a voice call or a text call from the tab whose content is visible.
ANI box	Displays the ANI of the current call in the overview area. The ANI can flash when network-specific conditions in a given system occur.
Current tab	Displays the location information for the current or last call, including ALIs from callbacks. The tab displays an indicator of the current console call: <ul style="list-style-type: none"> <li> Text call indicator <li> Voice call indicator
Manual tab	Displays the results of a manual location information request. <ul style="list-style-type: none"> <li> Text call indicator <li> Voice call indicator <li> Idle indicator
Recent tab	Displays the location information if the View in CID button is used from the Recent Calls window or the Abandoned Calls window. The tab displays an indicator of the call type: <ul style="list-style-type: none"> <li> Wireless Call <li> TTY Call <li> Emergency Call <li> Abandoned Call <li> Abandoned Call Callback <li> Monitored Call (displayed only if the Monitor button is shown in the Agents window). Monitoring is not supported for text calls.
Monitored tab	Displays the location information for monitored voice calls. <ul style="list-style-type: none"> <li> Voice call indicator
Status area	Displays status messages (for example, an ALI request has timed out) and the ANI input box during a manual request for location information. The status panel expands to display messages and the input box. Clicking the Dismiss button clears a message from the Status area.

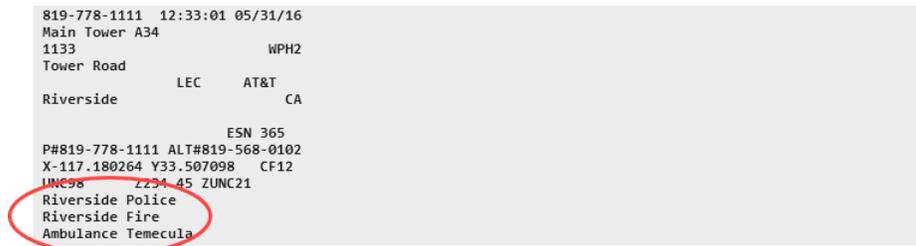


Location information area of the **Call Information Display** window can also display police, fire, and medical emergency service providers for **i3** calls and calls arriving on the public telephone network.



Note

An emergency service provider can appear in the **Dial Directory** as a **Selective Transfer Agency (STA)**.



Incorrect Location Information Report

The **Call Information Display** window provides access to the **Incorrect Location Information Report (ILIR)** form, which you can use to create and to submit an **Incorrect Location Information Report**. The form can capture incorrect location information data, corrections, and reasons for the incorrect information.

The fields available on the ILIR form are configured in DDS Configurator. For information, see the *Configuration Guide*.

Incorrect Location Information Report

819 555 5555
Jane King
125 Queen Street
Kingstown
12345

Date/Time: 3/11/2015 10:11:22 AM
Agency: Police
Calling Number: 819 555 5555
Agent: Joe
Agent Extension: 1234

Problem

Insufficient/Incorrect Location Information
 Correct Location Information, no map display
 Correct Location Information, incorrect map display

Other:

Calling Number incorrect. Change to:

Location Information misrouted, route to:

ESN incorrect. Change to:

Address incorrect. Change to:

The **Print** button prints the **Location Information Report**.

CALL INFORMATION REPORT FOR Default Agency

(951) 719-2104

Report Date	4/22/2013	Agent Name	Yvonne
Report Time	12:29:36 PM	Agent Role	Documentation Yvonne
Answered Date	4/22/2013	Trunk Number	A911Line4
Answered Time	12:21:58 PM	ESN	28
Console Name	2201		

LOCATION INFORMATION

(951) 719-2104 12:21:47 PM
 42505 RIO NEDO ST
 CITY OF TEMECULA
 RIVERSIDE CA 028 BUSN
 CO BUS

BUSN
 THIS TEST FOR NON-PRINT
 THIS LINE WILL BE PUSHED
 1006

TEMECULA PD
 SVT POT52
 BRONX

Related Links

[Call information](#) on page 64

[Location information configuration](#) on page 172

Enhanced Data

By using the [ANI](#) of the call, a third-party data center can provide the following information about an emergency caller and current location of a call:

- ◆ Location Information — for example, civic address, latitude/longitude, percentage probability of given information
- ◆ Personal caller information — for example, birth date, language, gender, contact information

- ◆ Caller medical information — for example, allergies, blood type, medical conditions, medications
- ◆ Traffic incidents reported by Waze — for example, location, distance from current incident, and incident type
- ◆ Car information for detected incidents reported by RapidSOS NG911 Clearinghouse — for example, connected car information such as a description of a vehicle, license plate information, and manufacturer

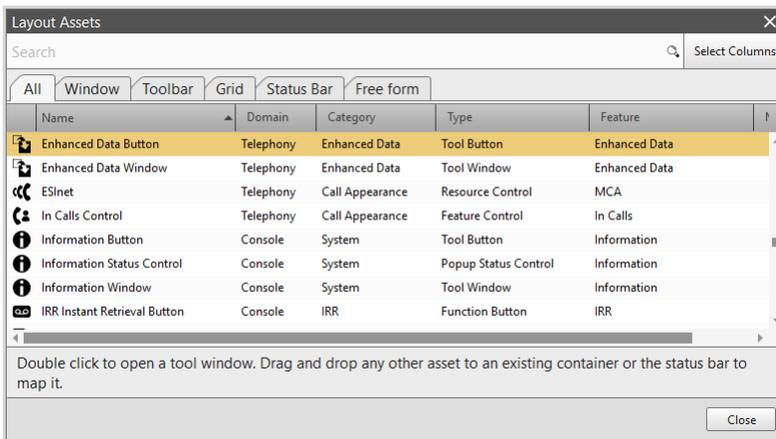
The **Enhanced Data** window continues to display the information of the caller after it is released and is cleared when the current call is updated.

Administrators can specify the kind of data that can be displayed on the console by call type (by agency) and by caller data (by role).

An **Enhanced Data** window is built on the Internet Explorer 11 browser that can be either docked or tabbed like other windows. An Enhanced Data toolbar button can be added to a layout to display a floating window as well.



When console customization is enabled, administrators can add the button and window assets to the console layout from the Layout Assets window.



The window contains an anchor data area that is always displayed and tabs that can be opened from the icons on the side. The following diagram shows the anchor area, **Location** tab, **Caller Information** tab, **Caller-Provided Information** tab, **Waze** tab, and **Connected Car** tab.

Enhanced Data				
Phone Number (819) 776-2401	Last Location Update 12/29/20			
Probable Address (Likelihood)	Long/Lat (Confidence)	Radius	Altitude	
33 Warren St Long Beach, NY 11561-0180P9	-73.712569 -40.833134	100 m	150 m	

Enhanced Data				
Phone Number (819) 776-2401	Last Location Update No location currently available			
Probable Address (Likelihood)	Long/Lat (Confidence)	Radius	Altitude	
Caller Information		Probable Address		
Address		Exact Location		
No location currently available		Likelihood		
Latitude/Longitude		Lat/Long:		
Caller-Provided Locations				
Waze				
Connected Car				

Anchor data

Enhanced Data				
Phone Number (819) 776-2401	Last Location Update No location currently available			
Probable Address (Likelihood)	Long/Lat (Confidence)	Radius	Altitude	
Caller Information		Personal Information		
Demographics		Name Jane Doe		
Birth Date		1971-1-2		
Gender		Female		
Height		5'0"		
Weight		125.5 lbs		
Ethnicity		Puerto Rican		
Languages		English		
Occupation		Accountant		
URL		https://myblog.com		
Note:				
Contact Information				
Known Phone Numbers		(819) 776-2401		
Note:				
Email:		jdoe@papir505.com		
Note:				

Location tab

Enhanced Data				
Phone Number (819) 776-2401	Last Location Update No location currently available			
Probable Address (Likelihood)	Long/Lat (Confidence)	Radius	Altitude	
Caller Information		Caller-Provided Locations		
Location Name		My Workplace		
Address:		999 S 16th St, New York, New York, US, 10018		
Comments		Third Building On The Left With The Big Brown Doors.		
URL:		https://work.com/admin		
Note:		Use to see security system status		
Contact Information				
Name & Relation		Phone Number	Email	
Jim Doe		(555) 555-5555	foreman@work.com	
Head of Security		Note: Call first in an emergency		

Caller Information

Enhanced Data				
Phone Number (819) 776-2401	Last Location Update No location currently available			
Probable Address (Likelihood)	Long/Lat (Confidence)	Radius	Altitude	
Caller Information		Traffic Incidents Reported by Waze		
Street Address		Incident Radius: 0.50 mi		
Sort By: Distance		Incident Filter		
Caller-Provided Locations		No incident has been found		
Waze				
Connected Car				

Caller-Provided Information

Enhanced Data				
Phone Number (819) 776-2401	Last Location Update No location currently available			
Probable Address (Likelihood)	Long/Lat (Confidence)	Radius	Altitude	
Caller Information		Connected Car Data		
Vehicle Data		Manufacturer		
Model		Color		
License Plate		Device Name		
Comment				
Contact Information				
Name & Relation		Phone Number	Email	
Jim Doe		(555) 555-5555	foreman@work.com	
Head of Security		Note: Call first in an emergency		

Waze

Connected Car

The following table contains the categories of content in the display window, where the content appears in the window, and a description of the values for each category. The display of the information for the tabs is configurable by role in the [additional data repository \(ADR\)](#). Where no information is received from a query, no values is displayed for a category. The content is always present unless otherwise indicated.

Name	Placement	Content		
Anchor data	Top of window (always present)	<ul style="list-style-type: none"> ◆ Phone Number of the caller that the location record belongs to ◆ UTC timestamp of when location was recorded on client device ◆ Civic address (not always present) ◆ Confidence percentage in the uncertainty radius (not always present) ◆ Likelihood that the address is accurate by percentage (0-100%) ◆ Circular radius of uncertainty in meters ◆ Latitude in decimal degrees ◆ Altitude (not always present) ◆ Longitude in decimal degrees 		
Caller Information	Tabbed window (presence configurable at the ADR) portal	<table border="0" style="width: 100%;"> <tr> <td style="vertical-align: top; width: 50%;"> Personal Information <ul style="list-style-type: none"> ◆ Demographics <ul style="list-style-type: none"> ◆ Photo ◆ Name ◆ Gender ◆ Birth Date ◆ Ethnicity ◆ Height ◆ Weight ◆ Languages ◆ Occupation ◆ Comment ◆ Email (text only; no live link) ◆ Contact information <ul style="list-style-type: none"> ◆ Phone number ◆ URL (text only; no live link) ◆ Note ◆ Addresses </td> <td style="vertical-align: top; width: 50%;"> Medical Information <ul style="list-style-type: none"> ◆ Allergy ◆ Disabilities ◆ Blood type ◆ Medical conditions ◆ Medications ◆ Note Emergency Contacts </td> </tr> </table>	Personal Information <ul style="list-style-type: none"> ◆ Demographics <ul style="list-style-type: none"> ◆ Photo ◆ Name ◆ Gender ◆ Birth Date ◆ Ethnicity ◆ Height ◆ Weight ◆ Languages ◆ Occupation ◆ Comment ◆ Email (text only; no live link) ◆ Contact information <ul style="list-style-type: none"> ◆ Phone number ◆ URL (text only; no live link) ◆ Note ◆ Addresses 	Medical Information <ul style="list-style-type: none"> ◆ Allergy ◆ Disabilities ◆ Blood type ◆ Medical conditions ◆ Medications ◆ Note Emergency Contacts
Personal Information <ul style="list-style-type: none"> ◆ Demographics <ul style="list-style-type: none"> ◆ Photo ◆ Name ◆ Gender ◆ Birth Date ◆ Ethnicity ◆ Height ◆ Weight ◆ Languages ◆ Occupation ◆ Comment ◆ Email (text only; no live link) ◆ Contact information <ul style="list-style-type: none"> ◆ Phone number ◆ URL (text only; no live link) ◆ Note ◆ Addresses 	Medical Information <ul style="list-style-type: none"> ◆ Allergy ◆ Disabilities ◆ Blood type ◆ Medical conditions ◆ Medications ◆ Note Emergency Contacts			
Location	Tabbed window (always present)	<ul style="list-style-type: none"> ◆ Probable location address ◆ Latitude in decimal degrees ◆ Likelihood that the address is accurate by percentage: 0-100% (always present) ◆ Longitude in decimal degrees ◆ Caller name (not always present) ◆ Contact information of the caller: for example, e-mail, phone number ◆ Exact civic address of caller 		
Caller-Provided Location	Tabbed window (presence configurable at the ADR portal)	<table border="0" style="width: 100%;"> <tr> <td style="vertical-align: top; width: 50%;"> Caller-provided locations—Full name, Address </td> <td style="vertical-align: top; width: 50%;"> <ul style="list-style-type: none"> ◆ Comment ◆ URL ◆ Contact </td> </tr> </table>	Caller-provided locations—Full name, Address	<ul style="list-style-type: none"> ◆ Comment ◆ URL ◆ Contact
Caller-provided locations—Full name, Address	<ul style="list-style-type: none"> ◆ Comment ◆ URL ◆ Contact 			

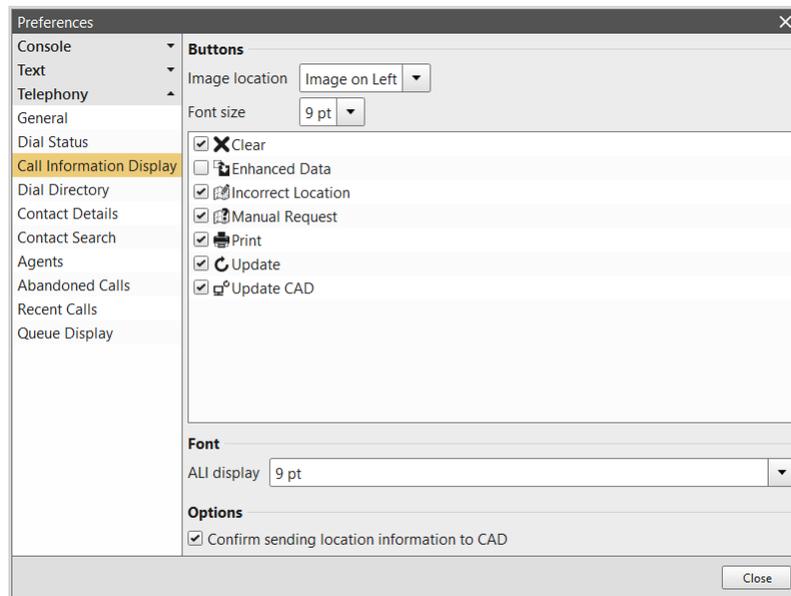
Name	Placement	Content
Waze	Tabbed window	Displays incidents in the vicinity of the current location of the call or location from a manual search. Telecommunicators can add new incidents. Not configured by default.
Connected Car	Tabbed window	<ul style="list-style-type: none"> ◆ Vehicle Data <ul style="list-style-type: none"> ◆ Color ◆ Comments ◆ Device ◆ Name ◆ License ◆ Plate ◆ Manufacturer ◆ Model ◆ Contact Information (Multiple entries) <ul style="list-style-type: none"> ◆ Name ◆ Phone ◆ Note ◆ Email

Users can select and copy to the clipboard any text that appears on the window.

The content of the Enhanced Data window can automatically refresh under the following conditions:

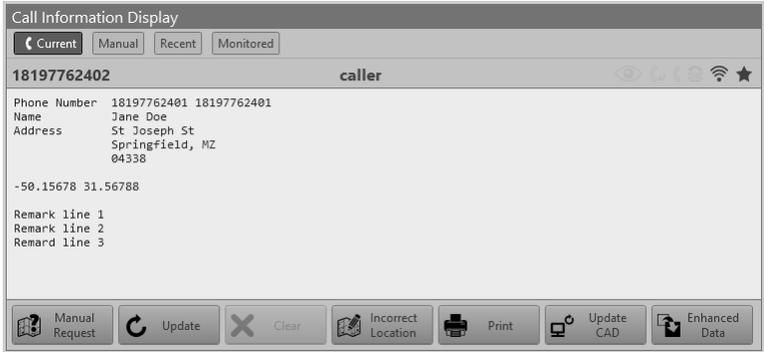
- ◆ Change in the information of the current call on the console
- ◆ Change to enhanced data

Administrators can add the **Enhanced Data** button to the Call Information Display window from its **Preferences** window.



The button becomes active on the **Current** tab of the window.

The **Enhanced Data** button can appear on the **Current** tab of the **Call Information Display** window.

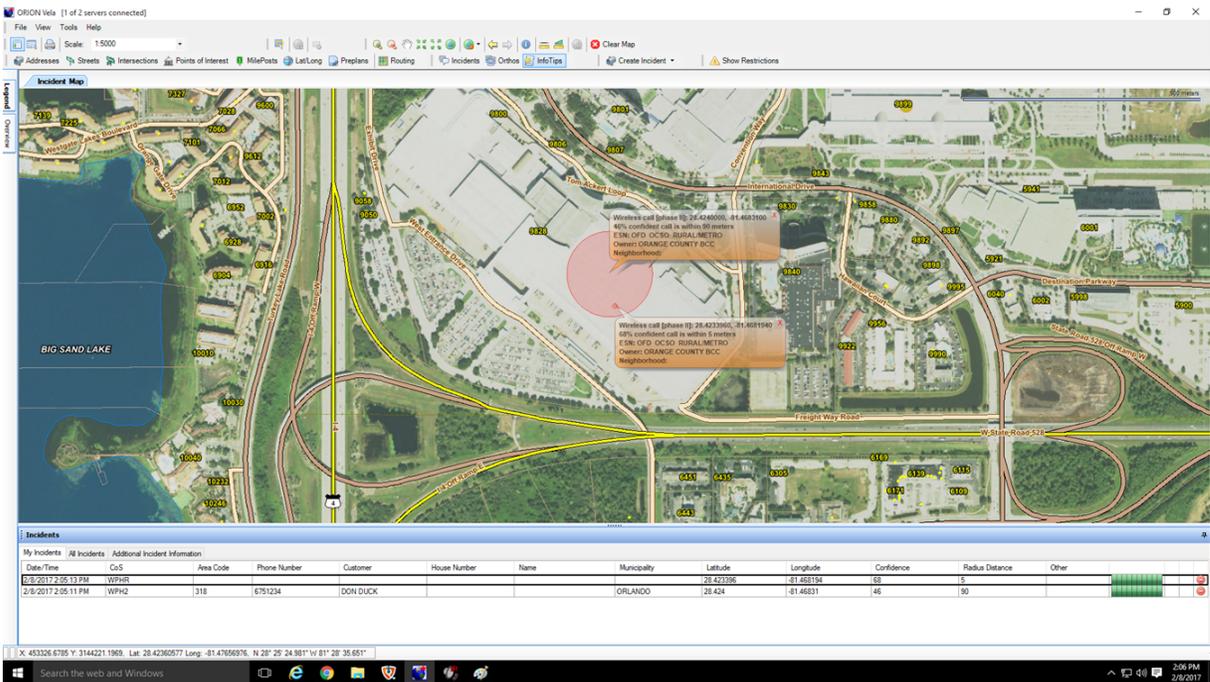


The **Enhanced Data** button can be displayed on the toolbar.



Additional data management credentials at the RapidSOS [ADR](#) let you integrate with other system consumers of enhanced data. For example, VESTA Map Local can query and display enhanced location data. The Enhanced Data window at the console and the active map can display the same information for a call.

In the following example, VESTA Map Local shows the location of the call using enhanced data to give the longitude, latitude, radius, and degree of location confidence based on the [ANI](#) of the call.



Voice call taking features

Voice call taking features enable users to answer and handle administrative and emergency calls. These features are made available by administrators who can customize the system to the needs of the call center.

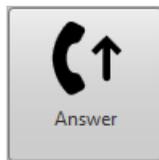
Answer

There are two **Answer** buttons on the console: a function button on the toolbar and on the expander of the [PCA](#).

Answer function toolbar button

With the **Answer** toolbar button, you can answer a voice call on a call appearance in the following order, depending on the configuration on the console:

- ◆ [ICA](#) — For [ACD](#) calls and Automatic Abandoned Call Distribution
- ◆ [PCA](#) — According to the priority of the call (by type and ringing time)



Answer expander button

With the **Answer** button, you can answer a voice call on the following call appearances in their Ringing state:

- ◆ [ICA](#)
- ◆ [PCA](#)



Related Links

[Refuse](#) on page 88

Blind Transfer – Supervised

The transfer of the call is only completed when the called party answers the call.

You can find **Blind Transfer** buttons in the **Dial Directory** and on a toolbar.



Blind Transfer – Unsupervised

A telecommunicator can complete the transfer of an administrative or emergency call before the call is answered by the called party. The call is transferred when the console or phone of

the called party is ringing. Before the call is answered, the transferring telecommunicator is available to take another call.

Blind Transfer buttons are available in the Dial Directory and on a toolbar.



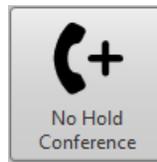
Related Links

[Transfer](#) on page 84

Conference

When a conference call is created using the Conference feature, the current party is put on hold when another party is dialed. The conference is created before or after the targeted party answers the conference request.

You can find Conference buttons on the **Dial Directory** and a toolbar.



Related Links

[No Hold Conference](#) on page 82

[Drop All](#) on page 76

[Drop Last](#) on page 76

[Release](#) on page 82

Drop All

The Drop All feature lets a telecommunicator remove all callers from a conference call, thereby ending the call.



Related Links

[No Hold Conference](#) on page 82

[Conference](#) on page 76

Drop Last

The Drop Last feature lets a telecommunicator remove the last-added caller from a conference call. Clicking the button releases the last participant who joined the call.



Related Links

[No Hold Conference](#) on page 82

[Conference](#) on page 76

End PCP

The End PCP button becomes available on the [ICA](#) expander during timer-based Post-call processing.



To return the [ICA](#) to an idle state before the Post-call processing timer expires, users can click the **End PCP** expander button on the call appearance. Depending on the configuration of the timer-based Post-call processing feature, the **End PCP** button can become available after a call is moved from an ICA to a [PCA](#).

Flash

The button can appear as below on a [PCA](#) and an [ICA](#) in a connected state.

The button can also appear on the:

- ◆ **Dial Directory**
- ◆ **Dial Pad**

The button can appear as below on a [PCA](#) and an [ICA](#) in a connected state.

The button can also appear on the:

- ◆ **Dial Directory**
- ◆ **Dial Pad**



The **Flash** button allows you to initiate network (or tandem) transfers and other commands while you are on an emergency or administrative call. The main advantage of using Flash instead of the Transfer or Conference buttons is that there is no need to use an additional available line to connect to a third party. Flash uses the incoming trunk/line to connect.



The central office of the incoming line or trunk must support flash transfers.

Note

While you are connected to a call on a [PCA](#) or the [ICA](#), clicking the Flash button followed by a number sends a signal to the Central Office, where the command is carried out: for example, a call transfer to an emergency responder. See your call center supervisor about the kinds of actions available through the Flash feature and the codes and digits required to perform the actions. An exclamation mark starts a Flash command where visible.

You can initiate a Flash transfer from the following console features:

- ◆ ICA and PCA — Flash command is sent on the line connected to the call appearance.
- ◆ **Dial Directory** and **Dial Pad** — Flash command is sent on the line of the first call.

The Flash command exclamation mark and digits are visible in the **Dial Directory**, **Dial Pad**, and the **Dial Directory** button pre-programmed with Flash. The exclamation mark does not appear in the call appearances.

The following table provides examples of flash transfers.

9-1-1 calls examples	Administrative calls examples
!*21 (Central Office code)	!4024
!6135555555 (No prefix required)	!9613555555

Join

You can add yourself as a participant to another call by using the Join feature. Joining a call is like adding yourself as a conference participant without being invited. Joining is also known as barge-in.



Your log on agent role must have the join permission enabled.

Note

The **Join** button is accessible from a full or compact **SCA** that is connected to a call on another console.



Full-view SCA

Compact SCA

The first telecommunicator who clicks the compact SCA answers the call. All subsequent telecommunicator click to join the call. Compact SCAs can be configured with one of the following options after the call has been answered:

- ◆ Continue to join the call.
- ◆ Continue to join call or cancel if the call has already been answered.

You can join a call of another telecommunicator listed in an **Agents** window.

You can join the call of a telecommunicator that you are monitoring. Joining the call ends the monitoring session.

After a call has been joined, the following occurs on the original and joining consoles:

Original console	Joining console
<ul style="list-style-type: none"> ◆ Another PCA activates and displays the call information of the telecommunicator who joins the call. ◆ The newly-active PCA contains the features configured for the console: Local Hold, System Hold, Flash, and Release. ◆ Release on the newly-created PCA drops the joining telecommunicator. It does not release the original caller. The call stays on the line on which it was received. 	<ul style="list-style-type: none"> ◆ All normal call handling features are available on the PCA of the joining caller. ◆ A conference cannot be created with the joined call. ◆ Joining a 9-1-1 call populates the Call Information Display window with the call's ALI.

A State Timer in the status area of the PCA indicates the duration of each of the states.

The **Join** button is accessible from a full or compact [SCA](#) that is connected to a call on another console.



Full-view SCA

Compact SCA

The first telecommunicator who clicks the compact SCA answers the call. All subsequent telecommunicator click to join the call. Compact SCAs can be configured with one of the following options after the call has been answered:

- ◆ Continue to join the call.
- ◆ Continue to join call or cancel if the call has already been answered.

Related Links

[Shared Call Appearance](#) on page 60

Local Hold

The Local Hold feature places the active emergency or administrative voice call on hold. The held call can be retrieved from the console on which it was put on hold. The held call can be retrieved from the [SCA](#) on which it is displayed

You can activate Local Hold in two ways on the console, depending on the layout:

- ◆ **Local Hold expander button** — Places the voice call on the [PCA](#) or [ICA](#) on hold. Only the telecommunicator who has put the call on hold can retrieve the call.
- ◆ **Local Hold toolbar button** — When a telecommunicator wants to suspend participation in a two-way call or a conference voice call of three or more, **Local Hold** can remove the

telecommunicator from the current call. Only the telecommunicator who has put the call on hold can retrieve the call.



Note

After a conference is put on local hold, the caller does not hear a hold tone but is bridged with the other call participants.



Toolbar button



Call appearance expander button

Related Links

[Retrieve local call](#) on page 83

[System Hold](#) on page 83

Move to PCA

The **ICA** on a console layout receives calls routed by **ACD**. A telecommunicator can handle the call on the ICA or move the call from the ICA to the **PCA**. By doing so, the ICA becomes available to receive ACD calls.

The **Move to PCA** expander button moves the current call and its call information from the ICA to an idle PCA, on which it is put on either local hold or system hold. The ICA becomes available again to receive another ACD call only if the PCA is not busy with an emergency call.



With the **Move to PCA** button, you can keep a call on your console and, at the same time, make the console available for **ACD** calls. Moving the call puts the call either on local hold or on system hold on the **PCA** depending on how the feature is configured:

- ◆ **Local Hold**—The call on the PCA can be picked up only by the telecommunicator who received the call.
- ◆ **System Hold**—The call on the PCA can be picked up by the telecommunicator who received the call and any other telecommunicator in the agency whose console has an idle **SCA**.

Related Links

[Shared Call Appearance](#) on page 60

[Multiple Call Appearance and Multi Calls button](#) on page 63

Network Conference

The **Network Conference** button lets the conference controller (the participant who initiates the conference) to add [ESInet](#) add callers to a network conference. Non-ESInet callers can also be added to this type of conference.



Note

After the conference controller drops from the call, control of the call passes to an added ESInet-based participant (other than the original caller) who adds another participant.

The **Network Conference** buttons can be part of the following console assets:

- ◆ As a function button on the toolbar
- ◆ On the expander of the [PCA](#)
- ◆ In the **Dial Directory**



Toolbar button



Expander or Dial Directory button

Related Links

[Network Drop Last](#) on page 81

[NG9-1-1 support](#) on page 20

Network Drop Last

With the **Network Drop Last** feature, you can remove the last-added party from an [ESInet](#) call if you are the conference controller. The feature is enabled when one or more conference participants are on an ESInet call.



Note

The ESInet service provider controls who can perform a drop the last-added participant on an ESInet conference call: that is, anyone on the conference call or the conference controller (typically, the participant who initiates the call). See your local administrator about who can drop the last-added participant on an ESInet conference call.

The **Network Drop Last** buttons can be part of the following console assets:

- ◆ As a function button on the toolbar
- ◆ On the expander of the [PCA](#) and [ICA](#)
- ◆ In the **Dial Directory**



Toolbar button



Expander or Dial Directory button

Related Links

[Network Conference](#) on page 81

[NG9-1-1 support](#) on page 20

No Hold Conference

On a No Hold Conference, the current party is kept on the line while another party is dialed. You can find a **No Hold Conference** button on the **Dial Directory** and a toolbar.



Related Links

[Conference](#) on page 76

[Drop Last](#) on page 76

[Drop All](#) on page 76

[Release](#) on page 82

Pickup

Clicking the Pickup button on an expander answers a call on a call appearance.



The Pickup does the following on these call appearances:

- ◆ Shared Call Appearance ([SCA](#)) — Answers a call on a shared line.
- ◆ Multiple Call Appearance ([MCA](#)) — Answers a call arriving on an MCA queue.
- ◆ Multi Calls button — Answers the longest-ringing call arriving on the Multiple Call Appearance with the highest priority.

In all cases, the call is immediately moved to a Personal Call Appearance ([PCA](#)) where all the normal call handling is done.

Release

The Release feature removes a caller from a call.

There are two **Release** buttons on the console:

- ◆ As a function button on the toolbar
- ◆ On the expander of the [PCA](#).

Release
function
button



A telecommunicator who has initiated a conference call can remove themselves from the voice call. The **Release** button becomes enabled on the console on which the conference call was created.

By clicking the button, the telecommunicator is dropped from the call while the conference participants remain on the call. On a two-party call, clicking **Release** ends the call.

Release
expander
button



The **Release** button removes a participant on the PCA from a conference call.

Related Links

[No Hold Conference](#) on page 82

[Conference](#) on page 76

Retrieve local call

Only the telecommunicator who placed the call on local hold can retrieve the call from the [PCA](#) or [ICA](#).



Related Links

[Local Hold](#) on page 79

Retrieve

The telecommunicator who placed the call on system hold can retrieve the call from the [PCA](#) as well as any other telecommunicators with the [SCA](#) mapped to their layouts.



Call appearance expander button.

Related Links

[System Hold](#) on page 83

System Hold

The System Hold feature places the active emergency or administrative voice call on hold. Any telecommunicator can retrieve the held call from the [SCA](#) on which it is displayed. A caller placed on hold hears a hold tone. The [PCA](#) on which the call arrives continues to display the call information.

You can activate System Hold in two ways on the console, depending on the layout:

- ◆ System Hold toolbar button — Places the active emergency or administrative voice call on hold. Any telecommunicator can retrieve the held call from the [SCA](#) on which it is displayed.
- ◆ System Hold expander button — Places the call on the PCA or ICA on hold. Any telecommunicator can retrieve the held call from the SCA on which it is displayed.

The following calls can be put on system hold:

- ◆ Multiple calls on system hold
- ◆ Incoming ACD calls
- ◆ Outgoing calls that use a single button ringdown or a Direct Access Admin Line

The following calls cannot be put on system hold:

- ◆ Conference calls
- ◆ Console-to-console calls



Toolbar button



Call appearance expander button

Related Links

[Retrieve](#) on page 83

[Local Hold](#) on page 79

Transfer

A telecommunicator can use the **Transfer** (on-hold) feature to consult with the called party before transferring the call. When the transfer is started, the party to be transferred is placed on local hold (soft hold).

You can find Transfer buttons on the Dial Directory and a toolbar.



Related Links

[Blind Transfer – Unsupervised](#) on page 75

[Transfer to Queue](#) on page 162

Text call features

A telecommunicator can handle emergency text calls by using the Text Calls, the Text Conversations window, and the [text MCA](#).

Text Calls window

The **Text Calls** window shows the list of existing text calls. The list of text calls is determined by the text queues that are associated with the current agent role.

A telecommunicator can pick up a text call in one of the following states:

- ◆ **Queued** — A text call that resides in the queue and has not been picked up by a telecommunicator. Queued calls include those that an agent has transferred to another queue and picked up by another agent.
- ◆ **Abandoned** — A text call that has ended before it is picked up. Text messages cannot be sent or received during the pick up of an abandoned call. A telecommunicator can view the message history of an abandoned call. She can call back an abandoned text call with a voice call only.

Text Calls							
Date	Time	Queue	CPN	Location	Initial Text Message	State	Owner
4/14/2015	8:47:06 AM	PSAP A	(613) 555-7633	ALI line 1 - ALI line 2 -	Help	Queued	
4/14/2015	8:47:11 AM	PSAP B	(613) 555-4462	ALI line 1 - ALI line 2 -	Help	Queued	
4/14/2015	8:47:21 AM	PSAP C	(613) 555-6785	ALI line 1 - ALI line 2 -	Help	Queued	
4/14/2015	8:47:30 AM	PSAP D	(613) 555-9969	ALI line 1 - ALI line 2 -	Help	Queued	
4/14/2015	8:47:36 AM	PSAP E	(613) 555-2404	ALI line 1 - ALI line 2 -	Help	Queued	
4/14/2015	8:47:46 AM	PSAP F	(613) 555-7975	ALI line 1 - ALI line 2 -	Help	Queued	
4/14/2015	8:47:51 AM	PSAP G	(613) 555-6144	ALI line 1 - ALI line 2 -	Help	Queued	
4/14/2015	8:47:58 AM	PSAP I	(613) 555-5873	ALI line 1 - ALI line 2 -	Help	Queued	

 Pickup

The **Text Calls** window can have the assets and customizations that are listed in the following table.

Assets	Description
CPN column	Displays the phone number of the texting device.
Date column	Displays the date that the text call was received on the text queue.
Initial Text Message column	Displays the beginning of the first text message that was received from the caller. The message is truncated if it exceeds the length of the column.
Location column	Displays the concise version of the location information of the caller.
Owner column	Displays the name of the last agent of the text call. The column shows the agent owning the connected call or the owner who transferred the text call to the queue.
Queue column	Displays the name of the queue of the text call.
State column	Identifies the state of the text call: Queued , Abandoned , Connected .
Time column	Displays the time that the text message was received on the text queue.
Button Image Location list	Lets you select the location of the image on a button: top, bottom, left, right, image only, text only.
Button Font Size list	Lets you select the font size of text on a button.
Pickup button	Clicking the button picks up a selected queued call or opens the call history of an abandoned call in the Text Conversations window.

Text Conversations window

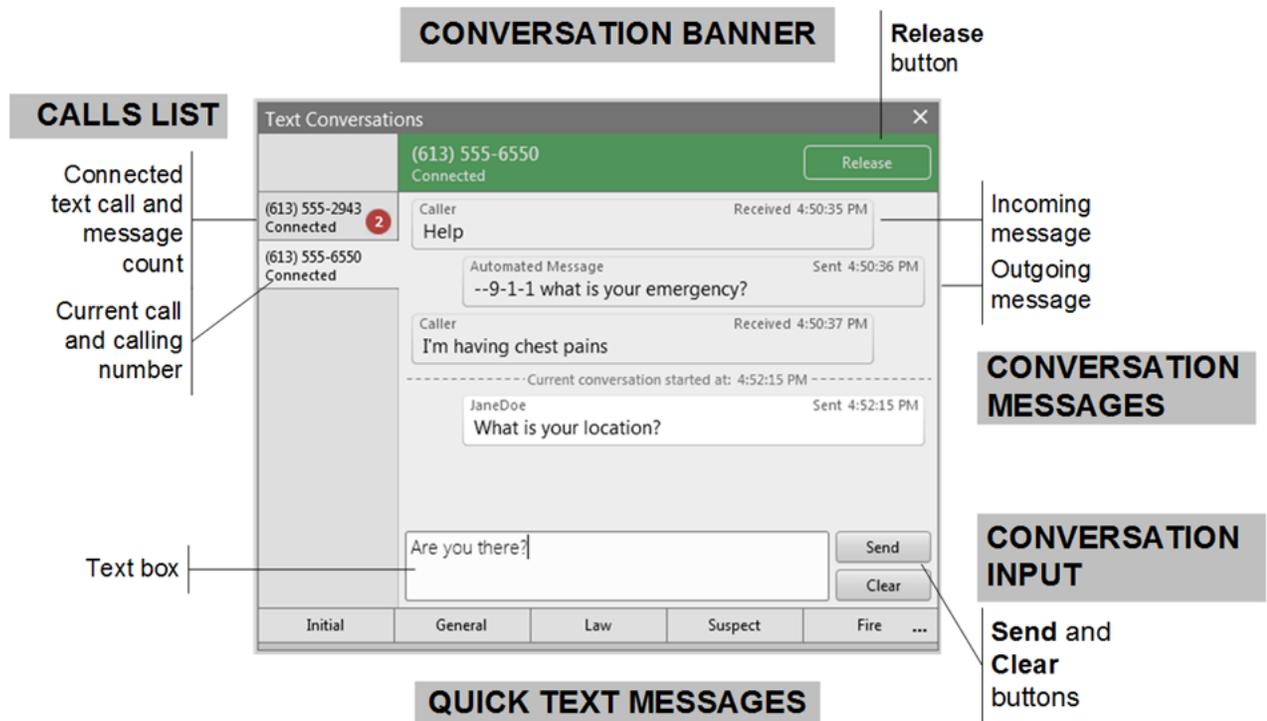
The Text Conversations window enables telecommunicators to do the following:

- ◆ Receive text calls and messages

- ◆ Respond to text callers with manually-entered text messages
- ◆ Send pre-defined text messages (Quick Text)
- ◆ View released calls and the unread message count for each unselected call

The Text Conversations window contains the following parts:

- ◆ Calls list — lists all calls that have been answered on the console and have not been closed. A call is represented by a tab showing the state of the call, the calling number, and a count of unread messages. By default, the call list is ordered by the oldest at the top to the newest at the bottom. Telecommunicators can select one call at a time.
- ◆ Conversation banner — contains information for the current call: that is, the selected tab from the list of calls. The calling number of the current call, its call state (Connected (green banner), Abandoned (blue banner), or Released (default theme)) is shown. For the current call, one of the following buttons is active depending on the state of the call:
 - ◆ Release — the button can be configured to do one of the following when the button is clicked for a Connected text call:
 - ◆ Release and close the window automatically.
 - ◆ Release the call only. A Close button appears.
 - ◆ Close — call state is Released or Abandoned.
- ◆ Conversation messages area contains received and sent messages for the selected text call. Past conversations from the same caller have a grey-shaded background and are separated from earlier conversations with a dashed line. The current conversation begins with "Current conversation started at: XX:XX:XX AM/PM."
 - ◆ Received messages are aligned left with the phone number of the caller and the Received message time stamp.
 - ◆ Sent messages are aligned right with the name of the telecommunicator and the Sent message time stamp.
 - ◆ Automated message responses are sent by the system to the caller.
- ◆ Conversation input area contains the following:
 - ◆ Text Box is the edit area for telecommunicator messages. The maximum number of characters and spaces is 1500 per message.
 - ◆ Send command button sends the current message in the Text Box. Depending on the console configuration, telecommunicators can send the text message by pressing the Enter key.
 - ◆ Clear command button clears the Text Box.
- ◆ Quick Text Messages — categorizes reusable messages. Clicking a category button displays the quick text messages for the category.

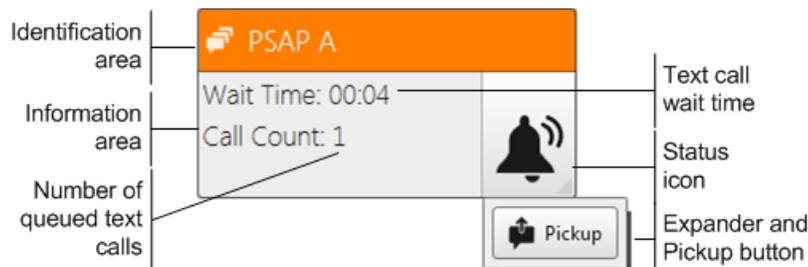


Text Multiple Call Appearances

A [text MCA](#) represents a text queue mapped to the console. With this call appearance, telecommunicators can pick up text calls that arrive at their consoles.

Each Text MCA has the following parts:

- ◆ **Identification area**—displays the name of the text queue that the call appearance is mapped to. The area changes color when a text call arrives on the call appearance. After the text call is picked up, the call appearance returns to its idle state (if there are no other queued text calls) and all the messages received while the call was queued appear on the **Text Conversations** window.
- ◆ **Information area**—displays information about the queue content:
 - ◆ Wait Time — the time spent in the text queue by the oldest unanswered text call.
 - ◆ Call Count — the number of unanswered calls in the text queue.
- ◆ **Status icon** — opens an expander that displays functions available in a particular state of the module: for example, queued.
- ◆ **Expander** — contains the **Pickup** button.



Call distribution features

Call distribution features send administrative and emergency calls to telecommunicators based on a selected routing scheme. Features enable a telecommunicator to remove herself from call distribution and restore her availability.

Refuse

When a telecommunicator uses the Refuse feature on an emergency call, the call continues to ring in the background until another telecommunicator answers it. The Refuse feature forces the console to the Not Ready state for receiving calls from the [ACD](#) queue.



Related Links

[Answer](#) on page 75

Console ACD Readiness

The following conditions determine whether a console can receive [ACD](#) calls:

- ◆ **Ready** — Telecommunicators indicate that they can receive calls. Telecommunicators can use the **Ready** button and the **ACD Readiness** button to switch to a not ready state. During call handling, a telecommunicator is unavailable for receiving calls based on the [ICA](#) state or (in the absence of an ICA) the [PCA](#) states. Users can see the ready status in the **Dial Status** window and the **ACD** column of the **Agents** window.
- ◆ **Not Ready** — Telecommunicators indicate that they cannot receive calls or system activities block calls. System activities can also put a console into a not ready state. telecommunicators can use the **Ready** button or the **ACD Readiness** button to switch to a ready state. Users can see the not ready status in the **Dial Status** window and the **ACD** column of the **Agents** window.
- ◆ **Not Available** — System activities prevent a console from receiving calls in an otherwise ready state. For example, handling an emergency call makes the console unavailable to receive calls. An **ACD Readiness** button mapped to the console indicates the **Not Available** state for routed calls (as well as indicating the **Ready** and **Not Ready** states). When an ICA is offline or when all the PCAs are unavailable, the console is unavailable to receive routed calls. Telecommunicators can see the not available status in the **Dial Status** window and the **ACD** column of the **Agents** window.

System events: Not Ready

In addition to manually switching their readiness states, a telecommunicator can be put automatically into a Not Ready state with the following system activities:

- ◆ **Manual post-call processing** — The console enters the Not Ready state as soon as a telecommunicator ends the call, so that administrative tasks such as reporting incorrect location information can be performed. To return to a Ready state, the user must click **Ready**.
- ◆ **Unplugged headset jack (if configured)** — For the role with which a telecommunicator is logged in to a console, the console can be set up to enter the Not Ready state, as soon as the headset is unplugged from the jackbox. When the headset is plugged back into the jackbox, the console is in the Not Ready state until **Ready** is clicked.

- ◆ Initial logon (if configured) — If the role with which a user is logged in to the console is configured with the default **ACD** state as Ready, the console is available to receive ACD calls as soon as a user logs on to the console. If the console is not configured in this manner, the telecommunicator must click **Ready** to be ready for ACD calls.
- ◆ Call refused (if configured)

A telecommunicator must click **Ready** to revert to the Ready state.

System events: Not Available

The Not Available state puts the telecommunicator out of call distribution temporarily because of the following events on the system:

- ◆ Timer-based post-call processing — The console remains in the not available state at the end of the call, but the **ICA** goes off-line for a specified period (between 1 and 300 seconds) as shown in the **ACD Readiness** button. The status area of the ICA contains a timer that counts down during this period. To return the to an idle state before the post-call processing timer expires, users can click the **End PCP** expander button on the call appearance. Depending on the configuration of the timer-based post-call processing feature, the **End PCP** button can become available after a call is moved from an ICA to a **PCA** or when the telecommunicator selects **Go Ready**
- ◆ Call activity — Connected, abandoned, held, ringing
- ◆ Offline ICA by active text call (if configured)
- ◆ ICA configured to offline during a call
- ◆ Silent monitoring (if configured)
- ◆ No call appearance available

When the system event ends, the **ACD** not available state automatically reverts to the Ready state. The Not Ready state takes precedence over the not available state.

IP phones

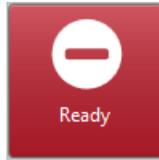
The effect of IP phones on **ACD** readiness depends on the type of phone:

- ◆ Enhanced IP phone — Ready for ACD calls during idle, ringing, connected, and held phone states. On configuration, not ready on first logon with default reason code of the agent. A telecommunicator cannot select not ready reasons on the phone.
- ◆ Basic IP phone — Ready for ACD calls during idle state. Not Available during ringing, connected, and held phone states.

Ready

Ready lets telecommunicators set their readiness to receive calls from an **ACD** queue.

A green **Ready** button indicates that the telecommunicator is willing to receive calls through an automated routing scheme. The ACD sends calls to telecommunicators depending on their availability. During this state, the telecommunicator does not receive calls when they are busy with a call. Clicking the button switches the console to the Not Ready state. A red **Ready** button indicates that the console is currently Not Ready to receive calls. The button can be configured to switch between the two states when a telecommunicator clicks the button.



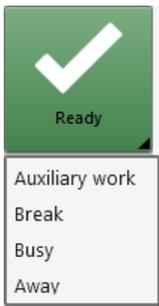
Note

In a Ringall ACD scheme, the user can log off if the console is in a Not Ready state and a call is ringing on a [SCA](#). However, a user cannot log off if the console is in the Ready state and a call is ringing on a [PCA](#).

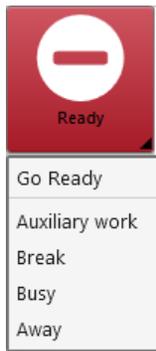
For a role, the console can be configured to be automatically in the Ready state when telecommunicators log on the console and after they complete a call: that is, after they have released a call from ACD or after the ACD caller has hung up.

Depending on the Ready/Not Ready state configurations on the system, a telecommunicator can set [ACD](#) readiness to Not Ready by selecting a reason for the change: for example, taking a break, indicating that they are busy with another activity, or preparing to end their shift. Calls are then routed to other telecommunicators in the ACD scheme. A telecommunicator can also select a different reason while still in a Not Ready state. The Not Ready state reasons can be configured as a list on the **Ready** button.

You can view the Not Ready state reasons by either clicking the **Ready** button or by pressing a keyboard shortcut. If you press a shortcut key, you can either type the number beside an option: (for example, **2** for Away) or scroll the list to an option and press ENTER.



Reasons list in a Ready state



Reasons list in a Not Ready state — from button



Reasons list in a Not Ready state — from shortcut



Note

Telecommunicators are not removed from the [ACD](#) queue until after a reason is selected.

The **Ready** button does not affect the presentation of calls on the Multi-Calls button.

In DDS Configurator, administrators can create a maximum of 20 customized Not Ready reasons that can be associated with a user role. The codes appear in the **Ready** button drop-down list of Not Ready reasons.

Related Links

[ACD Readiness](#) on page 91

[IP phones](#) on page 92

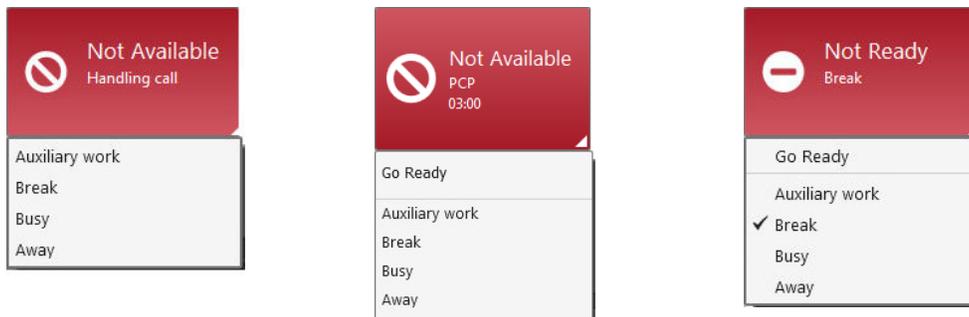
ACD Readiness

The **ACD Readiness** button indicates the three ACD states: Not Available (based on system conditions), Ready, and Not Ready. Telecommunicators can set their console readiness for **ACD** from any state:

- ◆ **Ready** — Telecommunicators indicate that they can receive calls.
- ◆ **Not Ready** — Telecommunicators indicate that they cannot receive calls or system activities block calls.
- ◆ **Not Available** — System events temporarily prevent a console from receiving calls in an otherwise Ready state: for example, an emergency call puts the console in an not available state.



Telecommunicators can select from a list of reasons on a **ACD Readiness** button to enter a Not Ready state. From a Not Ready state, they can select the **Go Ready** option if it is configured on the button. A keyboard shortcut can be configured to open a list of Not Ready reasons from the Ready state.

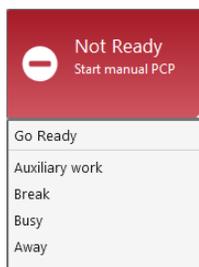


Reasons list in a Not Available state (without post-call processing)

Reasons list in a Not Available State (with timer-based post-call processing)

Reasons list in a Not Ready state

During manual-based, post-call processing, the **ACD Readiness** button indicates a Not Ready state. Telecommunicators have the option either to select **Go Ready** or to select another reason to remain Not Ready.



Note

In manual-based post-call processing, the system reason code can be displayed in the **Agents** window and is not presented as an option in the **ACD Readiness** button.

In DDS Configurator, administrators can create a maximum of 20 customized reason codes that can be associated to roles. The codes appear in the **Not Available** reason code lists.

If timer-based post-call processing is configured on a console with the **ACD Readiness** button, the user can switch to Ready or a Not Ready state before the post-call processing timer expires.

Related Links

[Ready](#) on page 89

[Automatic Call Distribution features](#) on page 160

[IP phones](#) on page 92

IP phones

The effect of IP phones on [ACD](#) readiness depends on the type of phone:

- ◆ Enhanced IP phone — Ready for ACD calls during idle, ringing, connected, and held phone states. On configuration, not ready on first logon with default reason code of the agent. A telecommunicator cannot select not ready reasons on the phone.
- ◆ Basic IP phone — Ready for ACD calls during idle state. Not Available during ringing, connected, and held phone states.

Related Links

[ACD Readiness](#) on page 91

[Ready](#) on page 89

Queue Display window

The **Queue Display** window contains real-time statistics about voice call queues ([ACD](#) and priority) and text call queues, such as the number and waiting times of calls on the queues. Average wait times are calculated from a configured period. Each row in the tabular window contains information for a queue.

Queue Display									
Media	Queue	Agency	Calls	Agents	Ready	Not Available	Not Ready	Longest Wait Time	Average Wait Time
☎	9-1-1	Agency 1	4	7	4	4	3	00:22	00:11
☎	Non-Emergency	Agency 1	3	2	1	0	1	00:45	00:43
☎	3-1-1	Agency 2	5	1	1	1	0	00:54	00:31
💬	Text - 9-1-1	Agency 1	8	1	--	--	--	00:29	03:34

The window can be customized by using the **Preferences** dialog box.

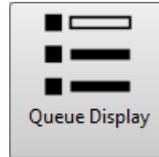
The **Queue Display** window also provides information about the call media on the queue (that is, voice or text), the agency it belongs to, the number of agents currently logged into the queue, and the [ACD](#) readiness of the logged in agents. The window can be configured to notify telecommunicators, such as supervisors, that specific thresholds have been reached through the use of color-coded indicators and audible alerts.

When the **Queue Display** window is hidden behind other tabbed windows on the layout, the indicators display on the tab. In the following example, the **Queue Display** window — which is tabbed behind the **Agents** window and **Dial Directory** window — indicates that a high alert threshold (by default in red) has been reached.



The **Queue Display** window can be available in the layout in the following ways:

- ◆ A tabbed or docked window.
- ◆ On a toolbar, as a button that opens the window.



- ◆ The **Queue Display** window button can be mapped to the toolbar.
- ◆ As a shortcut that opens the window.

The **Customize** tab on the **Queue Display** panel of the **Preferences** dialog box provides the following assets and customizations for the **Queue Display** window.



Note

Calculated wait times are displayed by default in minutes and seconds (mm:ss). Hours are displayed when the time exceeds one hour. Days are displayed when the time exceeds 24 hours.

Preferences	Description
Agency column	Displays the name of the agency that is associated with the queue.
Agents column	Displays the number of agents that are logged onto the voice queue or text queue. For voice priority queues, two dashes appear (--).
Average Wait Time column	Displays the average wait time of calls that are currently in the queue (default-mm:ss), (hh:mm:ss), (dd:hh:mm:ss).
Calls column	Displays the number of calls that are currently in the queue.
Longest Wait Time column	Displays the wait time of the call that has been in the queue the longest (default-mm:ss), (hh:mm:ss), (dd:hh:mm:ss).
Media column	Indicates that the queue contains voice or text calls. Configurable as an icon or text.
Not Available column	Displays the the number of agents that are unavailable in a routed ACD queue. For voice priority queues, two dashes appear (--). For text queues, two dashes appear, because readiness states are not shown for text queues. Text queues show only the number of agents logged onto the queue.
Not Ready column	Displays the number of agents that are in a not ready state in a routed ACD queue. For voice priority queues, two dashes appear (--). For text queues, two dashes appear (--) because readiness states are not shown for text queues. (Text queues show only the number of agents logged onto the queue.)
Queue column	Displays the name of the queue.

Preferences	Description
Ready column	Displays the number of agents that are in a ready state in a routed ACD queue. For voice priority queues and text queues, two dashes appear (--). Readiness states are not shown for text queues. (Text queues show only the number of agents logged onto the queue.)
Statistical Average Wait Time column	<p>Displays the rolling average wait time of calls that are in the queue for a specified time period: last 30 minutes, previous hour, previous four hours, previous eight hours, previous 24 hours, yesterday, last seven days, week to date. (default-mm:ss), (hh:mm:ss), (dd:hh:mm:ss)</p> <p> The Statistical Period is configured for Queue Display in the ASN. See the <i>VESTA 9-1-1 Configuration Guide</i> for details about setting the Statistical Period for this column.</p> <p>Note</p>
Font area	Selects the format of column headers and row content.
Thresholds area	<p>Available options are</p> <ul style="list-style-type: none"> ◆ Display threshold alerts per cell option — A visual notification displays in the cell in which a triggered threshold event occurs. ◆ Display threshold alerts per row option — A visual notification displays in the row in which a triggered threshold event occurs.
Media Column Content area	<p>Available options are</p> <ul style="list-style-type: none"> ◆ Display media as image — Displays text or voice call as an image. <p></p> <ul style="list-style-type: none"> ◆ Display media as text — Displays Text or Voice call as text. <p><input type="radio"/> Text <input type="radio"/> Voice</p>

The **Queues** tab on the **Queue Display** panel of the **Preferences** dialog box provides the following customizations for the **Queue Display** window.

Asset/Preference	Description
List of Queues area	Lists the voice and text text queues displayed in the Queue Display window.
Edit button	Opens a list of voice and text queues that are available for display in the Queue Display window.

Automatic Abandoned Call Distribution

You can receive abandoned voice calls from the system on the [ICA](#).

Callback

The **Callback** feature appears in the expander of the [ICA](#) after a telecommunicator answers a notification through the Automatic Abandoned Call Distribution feature.

Clicking the button dials the number of the presented abandoned call through the [PCA](#) where all call handling features are available.



Related Links

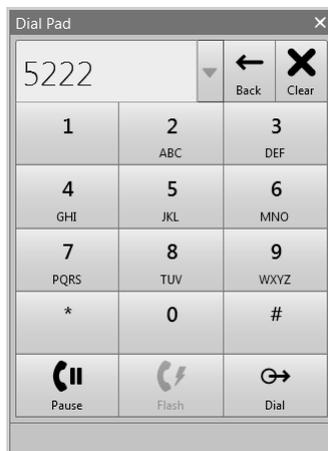
[In Calls Appearance](#) on page 58

Dialing features

A telecommunicator can place a call using one of several different features on the console.

Dial Pad

The **Dial Pad** lets you place voice calls. The **Dial Pad** can be customized by using the **Preferences** dialog box.



The **Dial Pad** can be available in a layout in the following ways:

- ◆ An open window.
- ◆ On a toolbar, as a button that opens the window.



- ◆ As a shortcut that opens the window.

Dial Directory

With the **Dial Directory**, you can dial a phone number, transfer call information, or both by clicking a button rather than by typing the phone number. It can also provide a customizable toolbar of buttons that let you access other windows and perform call taking actions related to

dialing. The window can be customized by using the **Preferences** dialog box and from the **Customize Container** toolbar that can be accessed from the **Dial Directory**.



You can perform the following actions by using the **Dial Directory**:

- ◆ Create 9-1-1 conference voice and text calls and transfers with transfer agencies. A group of emergency responders can be configured with an [emergency service number \(ESN\)](#), so that the transfer agencies that appear in the **Dial Directory** match the caller's location. VESTA 9-1-1 also supports the display of transfer agencies from the [ESInet](#) network according to the caller's location. An emergency responder contact can be configured with a phone number and a [URI](#). As the location of the caller changes, the emergency responders returned from the ESInet can be updated.
- ◆ Drop the last leg of a voice call conference, including ESInet calls.
- ◆ Transfer voice and text calls, including Flash transfers through a Central Office, and blind transfers of a voice call.
- ◆ Search for a contact in the group that is displayed in the **Dial Directory**.
- ◆ Dial a contact and transfer call information to a data device associated with that contact.
- ◆ Manually enter and dial a phone number or perform secondary dialing.
- ◆ Call back the highest priority call in the abandoned call queue.
- ◆ Display the **Abandoned Calls** window, **Contact Details** window, **Dial Pad**, **Contact Search** window, **Recent Calls** window, and **Agents** window.

The **Dial Directory** can be available in a layout in the following ways:

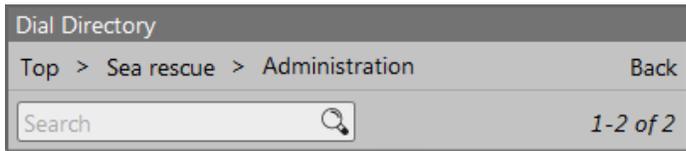
- ◆ An open window.
- ◆ On a toolbar, as a button that opens the window.

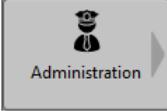


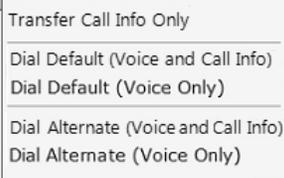
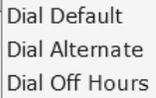
- ◆ As a shortcut that opens the window.

The Dial Directory can contain the assets and customizations that are listed in the following table.

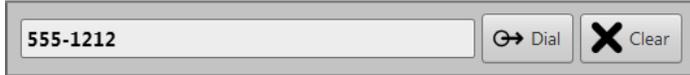
Asset/Preference	Description
Top Group list	The top group that is displayed in the Dial Directory.

Asset/Preference	Description
When Contact is Dialed list	Provides two options: <ul style="list-style-type: none"> ◆ Remain in Group — The group remains displayed after the contact is dialed. ◆ Return to Top — The top group is displayed after the contact is dialed if it was not already displayed.
Show tool tips check box	Provides two options: <ul style="list-style-type: none"> ◆ Default Phone Number — Displays the default phone number for a contact as the ToolTip. No information is displayed for a group. ◆ Help Text — Displays the help text for a contact or a group.
Enable Autofocus check box	Ensures that the Dial Directory has focus when a line transitions to a dial tone or to talking mode, when, for example, a call is answered, line is selected, or a call back from the Recent Calls window is started.
Voice Transfer Agencies — Button Caption box	The caption is displayed on the voice transfer agency button.
Text Transfer Agencies — Button Caption box	The caption is displayed on the text transfer agency button.
Image options	The image and color that is displayed on the text transfer agency button.
Button Image Location list	The location of the image on a button: top, bottom, left, right, no image, no text.
Button Font Size list	The font size of text in on the buttons.
Breadcrumb navigation	Indicates the level of nesting of groups within the top group. For example, if the Administration group is displayed in the Dial Directory, you can click on any breadcrumb to display the group of the previous level.
	
Search field	Field that can be used to search for contacts and groups belonging to the group that is currently displayed in the Dial Directory.
Buttons for groups and contacts	Clicking a contact button dials the contact. Clicking a group button displays the buttons for the contacts and groups that belong to that group.

Asset/Preference	Description
	<p>Group button — arrow indicates a group button</p> 
	<p>Contact button — Alternate phone numbers icon</p> <p>##</p> <p>Indicates that telephone numbers other than the default number are available.</p> 
	<p>Contact button — Notes icon</p>  <p>Indicates that notes are available.</p> 
	<p>Contact button — Data icon</p>  <p>Indicates that call information data can be sent to a data device associated with the contact.</p> 
	<p>Contact button — Error icon</p>  <p>Indicates that the ESInet-based transfer agency is not configured on the system.</p> 

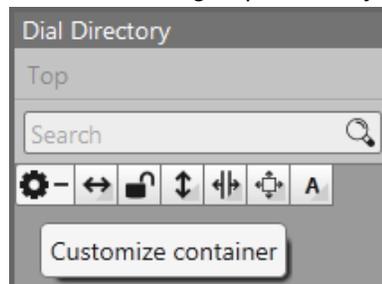
Asset/Preference	Description
 The icon for 'Police Voice Data' shows a printer, a document, and a phone handset, with two '#' symbols in the top right corner.	<p>Right-click menu for voice-and-data contact.</p>  A right-click context menu for 'Police Voice Data' with the following options: <ul style="list-style-type: none">Transfer Call Info OnlyDial Default (Voice and Call Info)Dial Default (Voice Only)Dial Alternate (Voice and Call Info)Dial Alternate (Voice Only)
 The icon for 'Homicides' shows a stylized figure and two '#' symbols in the top right corner.	<p>Right-click menu for voice-only contact.</p>  A right-click context menu for 'Homicides' with the following options: <ul style="list-style-type: none">Dial DefaultDial AlternateDial Off Hours

Asset/Preference	Description
Dial Directory toolbar	<p>The toolbar can contain the following buttons:</p> <ul style="list-style-type: none"> ◆ Abandoned Calls — Displays the Abandoned Calls window. ◆ Agents — Displays the Agents window, which lets you place calls to other telecommunicators. ◆ Blind Transfer — Initiates a blind transfer of a voice call. The transfer can be supervised or unsupervised depending on how it is configured in the Preferences dialog box accessible from the Layout menu. ◆ Conference — Initiates or completes a consultative conference of a voice call. ◆ Contact Search — Displays the Contact Search window, which lets you search for contacts in the contact list that is mapped to the layout. ◆ Details — Displays the Contact Details window. The Details button is disabled when the Dial Directory displays Text Call Transfers queue buttons. The Details button is enabled when the Dial Directory is populated with ESN-based contact buttons. ◆ Dial Pad — Displays the Dial Pad, which you can use to dial a call. ◆ Drop Last — Drops the last leg of a conference of voice calls. The leg may be ringing, consultative, or completed. <ul style="list-style-type: none"> ◆ For a ringing consultation call — The consultation call is dropped. The held call is unheld. ◆ For an active consultation call — The consultation call is dropped. The held call is unheld. The PCA is unseized. ◆ For a completed conference — Last party added is dropped. Remaining parties continue uninterrupted. ◆ Releases the last non-ESInet party that is part of an ESInet conference. ◆ Flash — Lets you flash transfer a voice call back out on the incoming trunk or centrex lines to access features provided by the telephony provider. ◆ Network Conference — Conferences ESInet calls. For this type of conference for voice calls, the first available PCA does not go off hook. ◆ Network Drop Last — Drops the last ESInet caller added to a conference of voice calls. ◆ No Hold Conference — Initiates a no hold conference of voice calls. ◆ Priority Abandoned Callback — Dials the oldest abandoned call. At least one abandoned voice call must be present on the system for the Priority Abandoned Callback button to be available. ◆ Recent Calls — Displays the Recent Calls window, which provides information about the most recent calls. ◆ Text Call Transfers — Displays transfers for the current text call. Call information transfer is not available for text calls.

Asset/Preference	Description
	<ul style="list-style-type: none"> ◆ Transfer — Initiates or completes a consultative transfer of a voice call. ◆ Transfer Agencies — Displays a group of contacts for the ESN or ESInet transfer agencies. The ESN-based transfer agencies are grouped by ESNs. The ESInet transfer agencies that display in the Dial Directory are retrieved from the ESInet network by queries which are based on the service URN sent by the console and the location of the caller.
Manual dialing box	Used to manually dial alphanumeric digits. Primary dialing digits are sent when Dial is clicked or when ENTER is pressed. Secondary dialing digits are sent immediately.
	
Dial button	Dials the digits entered in the manual dialing box.

The **Dial Directory** is highly customizable. If you have **Reconfigure Layout** permission (defined in DDS Configurator), you can customize the following assets for the Dial Directory:

- ◆ Map a top group to the **Dial Directory** by using the **Preferences** dialog box. The top group can contain contacts and groups. The top group must belong to the contact list that is mapped to the active layout.
- ◆ Select the dimensions of contact and group buttons, the distance between contact and group buttons, the location of the image on a contact or group button, and the size of text on a contact or group button by using the **Customize Container** toolbar.



- ◆ Select which group to display after a contact is dialed: display the top group after a contact from a nested group is dialed or keep the nested group displayed in the **Dial Directory**.
- ◆ Select the buttons to display on the **Dial Directory** toolbar.
- ◆ Select to display ToolTip text or the default number for a transfer agency button.

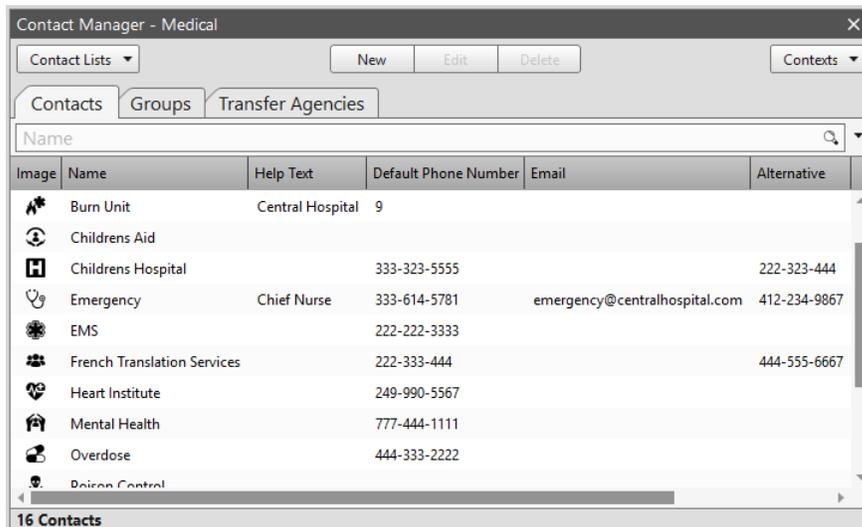
The location of the image on the buttons and the text size on the buttons can be customized.

You can provide ToolTips for contacts and groups that are displayed in the Dial Directory.

ToolTips are enabled in the **Preferences** dialog box from the **Dial Directory** panel. A ToolTip can display help text, the default phone number for a contact, the **URI** (for [ESInet](#) transfer agencies), or the name of the contact depending on the configuration. For non-ESI-net contacts, you can override the default phone number setting. The items are defined in the **Contact Manager**.

Contact Manager

The **Contact Manager** lets you manage contact lists, contacts, groups, **ESInet** transfer agencies, and contexts.



You can perform the following actions by using the Contact Manager:

- ◆ Create, edit, and delete custom contexts.
- ◆ Edit system contexts: The **Default** system context can be assigned to contacts and can only be edited. This is the only system context available for contacts. The **Internal** system context can be assigned to telecommunicators and is used for calls placed from the Agents window. The **Callback** system context is used when placing callback calls from the Recent Calls window and when using the **Emergency Callback** button.
- ◆ Define the custom fields to provide additional information for a contact. Custom fields are available to all agencies and can be filtered for a layout. A maximum of 10 custom fields can be defined. A custom field can be a text, e-mail, or phone number field.
- ◆ Create, edit, copy, and delete contact lists. A system can contain a maximum of 100 contact lists (one per agency).
- ◆ Import and export contact lists.
- ◆ Create, edit, copy, and delete contacts.
- ◆ Create, edit, copy, and delete groups. A group can contain contacts and other groups.
- ◆ Create, edit, and remove an **ESInet**-based transfer agency. For **ESInet** calls, a transfer agency appears in the **Dial Directory** in the **Transfer Agencies** tab based on the location of the **ESInet** call and the available transfer agencies.
- ◆ Assign an **ESN** to a group.



Note

A user requires **Reconfigure Layout** permission (see the *VESTA 9-1-1 Configuration Guide*) to access the Contact Manager.

If you use the Dial Directory, you must create a group that can be mapped to the Dial Directory as the top group.

You can migrate Auto Dial information to this release by using the Auto Dial Migration Utility. You can migrate Speed Dial information by using the Speed Dial Migration Utility. Most

migrated contact lists require some post-import configuration. For more information, see the *VESTA 9-1-1 Utilities Guide*.

Contact Lists

A contact list contains contacts and those same contacts organized into groups. The name for a contact list must be unique, can contain a maximum of 32 characters, and is case sensitive. The **Name**, **Help text**, and **Default phone number** fields are available by default for each contact. If you want to provide additional information for contacts, you can add up to 10 custom fields when you define a contact list. Custom fields are shared among agencies. The following types of custom fields are available:

- ◆ Phone number
- ◆ Email
- ◆ Text

A phone number can be added as a custom field with [SIP URI](#) or a tel URI for network conferences on a connected [ESInet](#) call.

See the URI validation section for the rules and restrictions for URIs in a custom phone number field.



Note

Neither a SIP URI nor a tel URI can be used in the **Default phone number** field. Both can only be used for a custom field.

The label for a custom field can contain a maximum of 32 characters. When you delete a custom field in a contact list, the information that was provided in this field is deleted for all contacts.

Type	Name
<input type="checkbox"/> Phone Number	Evening phone number
<input type="checkbox"/> Phone Number	Weekend phone number
<input type="checkbox"/> Email	E-mail
<input type="checkbox"/> Phone Number	ESInet STA
<input type="checkbox"/> Text	Notes

Contacts

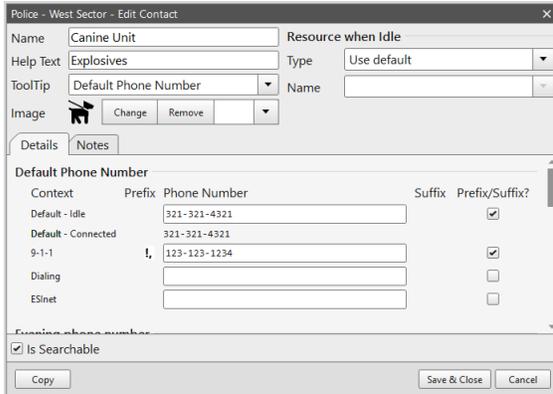
You can create contacts and groups in the **Contact Manager**. A group can contain contacts and other groups. Groups can be nested within groups in multiple levels. A contact can belong

to multiple contact lists. Names within a group must be unique. A group name must be unique in a contact list, but multiple contact lists can have a group with the same name.

All contact information is shared between agencies, with the exception of the following fields, which are unique to an agency:

- ◆ Resource when Idle settings
- ◆ Custom contexts
- ◆ Searchable setting

On the **Details** tab, the following options are available for a contact.



Asset	Description
Name	Name of the contact that is displayed on the contact button in the Dial Directory . A contact name can contain a maximum of 32 characters and is case sensitive. A contact cannot have the same name as a group when both belong to the same contact list.
Help Text	Text that provides supplemental information about the contact (for example, Speaks Spanish) and that helps a telecommunicator determine whether or not this is the contact they require. The help text appears in the Dial Directory for mapped contacts and in the Contact Search window. Help text can contain a maximum of 256 characters.
Image	Opens the Select Image dialog box from which you can select an image that displays on the contact button if it is mapped in the Dial Directory and in the Contact Search window.
Color	A color picker lets you pick a color for the image that displays on the contact button in the Dial Directory .

Asset	Description
Resource when Idle	<p>You can select the line type that you want to use as default. The following options are available:</p> <ul style="list-style-type: none"> ◆ Use Default — The name of the default line, as configured in the Default System Context. ◆ Direct Access Line — List of direct-access lines and groups configured in the system. If a single line is required, a line group containing one line can be configured. ◆ PBX Resource — Personal call appearance is automatically selected. <p>If you select Use Default, then the Resource when Idle settings of the context is used. Otherwise, the line type selected here overrides the contexts for the phone numbers that you provide in the Default Phone Number and any custom phone number fields.</p>
Default phone number	<p>The Details tab displays the default phone number of a contact is dialed if you click the contact button in the Dial Directory. You can associate custom contexts and the Default system context with a contact.</p>
Prefix/Suffix?	<p>After you select this check box on the Details tab, the prefix and/or suffix defined for the context is applied to the phone number.</p> <p>The decorated phone numbers are displayed on the Details tab.</p>
Custom fields	<p>You can add a maximum of 10 custom fields. A custom field can be a phone number field, an email field, or a text field. Information for the custom fields can be provided on the Details tab.</p> <p>The label for a custom field can contain a maximum of 32 characters. A field can contain a maximum of 256 characters.</p>

The following table lists the type of items that can be added to the **Notes** tab and the formatting operations that can be performed. The tab can hold a maximum of 100 KB of data.

Police - West Sector - Edit Contact

Name: Canine Unit Resource when Idle: Use default

Help Text: Explosives Type: Use default

ToolTip: Default Phone Number Name: [Empty]

Image: [Image] Change Remove [Color]

Details Notes Data

Seoae UI 12.5 pt B I U [List] [List] [List] [Color]

A police dog, often referred to as a "K-9" (which is a homophone of canine) in some areas, is a dog that is trained specifically to assist police and other law-enforcement personnel in their work. The most commonly used breed is the German Shepherd, although now Belgian Malinois are also fairly popular dogs to use. In many jurisdictions the intentional injuring or killing of a police dog is a felony.

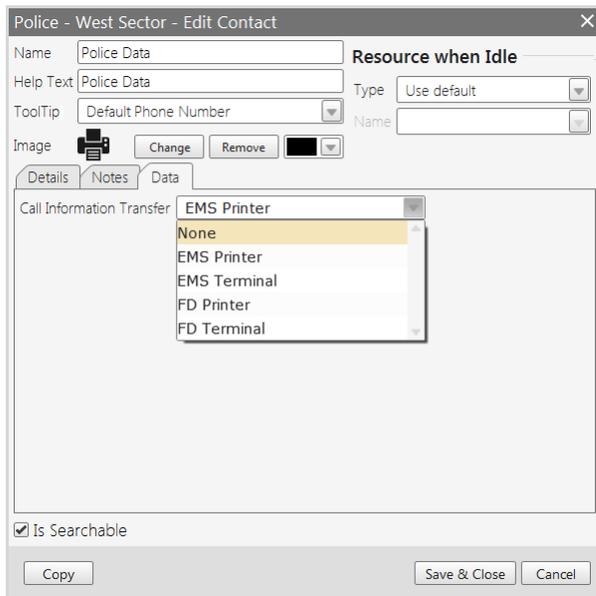
http://en.wikipedia.org/wiki/Police_dog

Is Searchable

Copy Save & Close Cancel

Item	Description
Text, tables, hyperlinks, and graphics	Text, tables, hyperlinks and graphics from Microsoft Word documents can be pasted into the Notes window. Text in a table can be modified, but table operations such as deleting a row are not available.
Highlight text	The mouse or keyboard can be used to highlight text.
Clipboard operations	The copy, cut, and paste operations are available.
Shortcuts	A number of shortcuts are available, for example, CTRL+Z to undo and CTRL+Y to redo.
Move to a new line.	Press ENTER.
Insert a tab.	Press TAB.
Paste text from Microsoft Word or WordPad.	Text formatting is retained.
Paste text from other document formats.	Text formatting is not retained.
Various text formatting options	

If one or more dedicated data devices are configured in DDS Configurator, the **Data** tab is displayed in the **Contact Manager**.



The **Data** tab contains the **Call Information Transfer** list:

- ◆ None — default option
- ◆ Names of dedicated data ports in alphabetical order

The dedicated data devices listed in the **Contact Manager** are available to all agencies, meaning that these devices are not specific to the agency through which a user is logged on.

Data transfer is supported for the following lines and call types:

- ◆ Emergency calls on 9-1-1 trunks
- ◆ Emergency lines
- ◆ On admin lines, saved call or transferred call information is supported
- ◆ Calls originating from ESInet
- ◆ Abandoned calls, answered on the ICA
- ◆ Abandoned callbacks

Groups

Contacts in a list can belong to one or more groups. You can create, edit, and delete groups, which can contain contacts and other groups. You can create as many groups as you require.

A group can be associated with an [ESN](#). You have to create at least one group if you plan to add the **Dial Directory** to a layout.

On the **Groups** tab, the following options are available.

Asset	Description
Name	Name of the group that is displayed on the group button in the Dial Directory A group name can contain a maximum of 32 characters and is case insensitive. A group cannot have the same name as a contact when both belong to the same contact list.
Help Text	Text that provides supplemental information about the group (for example, Spanish Speaking team) and that helps a telecommunicator determine whether or not this is the group they require. The help text appears in the Dial Directory for mapped groups. Help text can contain a maximum of 256 characters.
ESN	Assigns a maximum five-digit numeric ESN to a group. ESNs are defined in DDS Configurator.

Asset	Description
Image	Opens Select Image dialog box from which you can select an image that displays on the group button if the group is mapped in the Dial Directory .
Color	The color picker lets you pick a color for the image that displays on the group button in the Dial Directory .
Group Members list	Lists all contacts and groups that were added to a group by using the Add button.

Transfer Agencies

You can add [ESInet](#) transfer agencies in the **Contact Manager**. The contacts for the transfer agencies originate in the ESInet based on the current location of the 9-1-1 wireline or wireless caller and the kinds of services requested by a telecommunicator. They are displayed in the **Dial Directory** through the **Transfer Agencies** button.

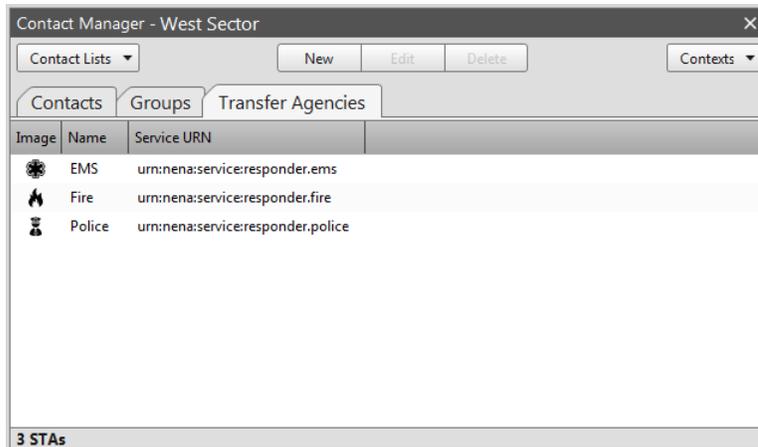
Service [URNs](#) are used to request the transfer agencies for display on the console. The ESInet network responds with the corresponding [URIs](#) for the transfer agencies based on the caller's current location: for example, police, fire departments, and ambulance services. As the caller location changes, the contact information for the transfer agencies can be updated as well.

A telecommunicator can click the transfer agency button in the **Dial Directory** to conference with the emergency responder.

Service [URNs](#) must be configured on the **Service URNs** page under **ESInet Configurations** in the DDS Configurator, so that they can be available for configuration on the console.

The creation of transfer agencies on the console involves the configuration of the transfer agency buttons in the **Dial Directory**. Button labels and images can be configured with the addition of the service URN. Transfer agencies can be edited and deleted from the console.

The following image shows the three default URNs added to the **Transfer Agencies** tab of the Contact Manager. By selecting one of them, the **Edit** and **Delete** buttons become active.

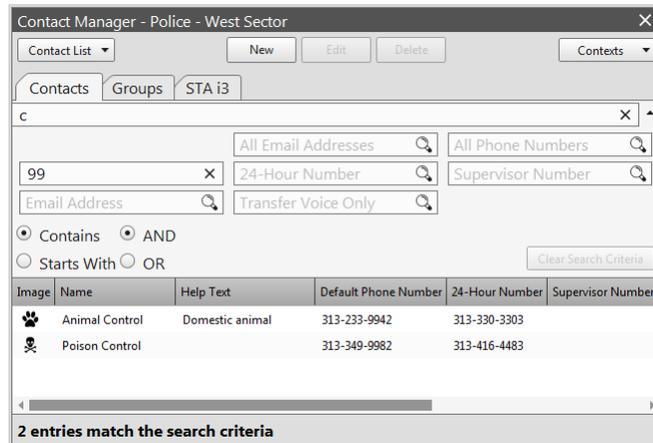
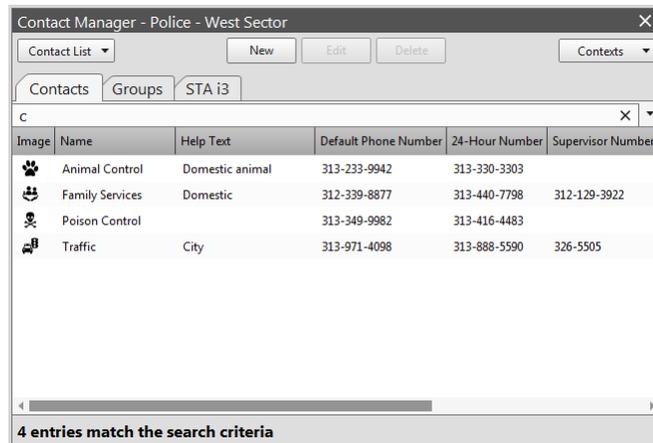


The following table lists the column names of **Transfer Agencies** tab and a short description of each:

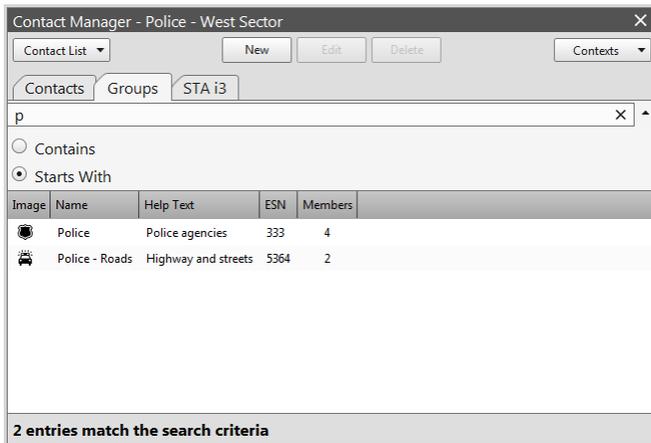
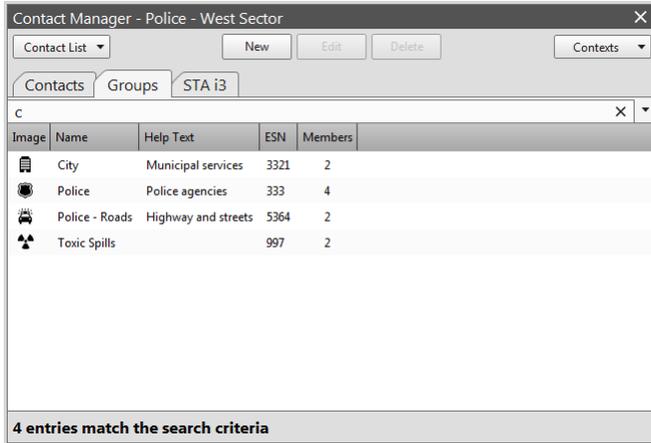
Asset	Description
Image	Image that is configured to display on the transfer agency button in the Dial Directory .
Name	Name that is configured to display on the transfer agency button in the Dial Directory .
Service URN	The service URN selected to request the transfer agency.
Order buttons	Ordering the transfer agencies sets the order of the transfer agencies that appear in the Dial Directory .

Contacts and group search

A contact list can be searched for contacts. Two types of searches are available: a simple search by contact name (first graphic below) and a complex search based on information fields and boolean operators (second graphic below).



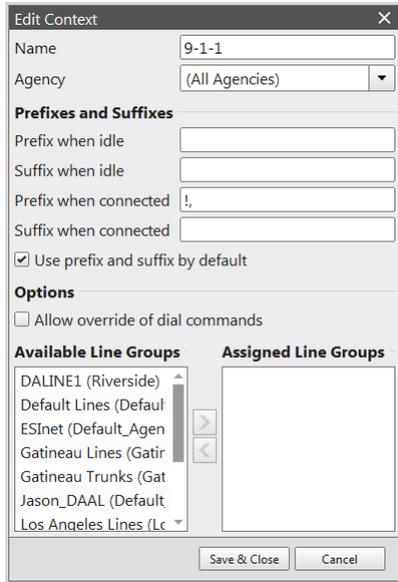
A contact list can also be searched for groups, which are really a sublist of contacts. Two types of searches are available: a simple search by group name (first graphic below) and a search by partial group name (second graphic below).



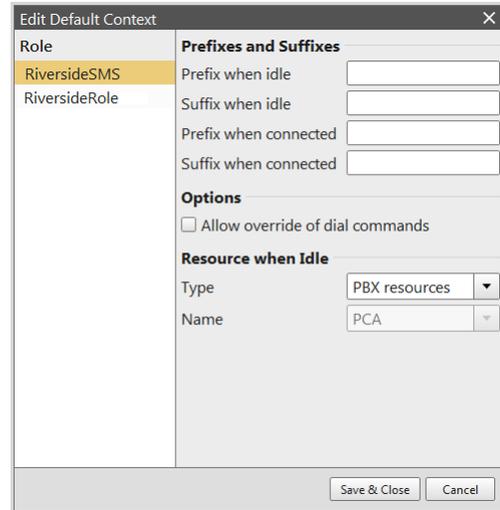
A contact list must be mapped to a layout for its top group to be mappable to the **Dial Directory** and for it to appear in the **Contact Search** window.

Contexts

A context that you assign to a line group is used when you dial a call on a line that belongs to that group. The Contact Manager lets you define system and custom contexts.



Custom context



Default system context

The Contact Manager provides three system contexts that you can edit.

System context	Description
Default	Is the only system context that can be assigned to a contact. Used when a call is dialed and no line is active or if no context associated with a line group.
Callback	Used for abandoned calls that can be returned from the Priority Abandoned Callback button in the Dial Directory and for callbacks from the Recent Calls window.
Internal	Used for voice calls that are placed to telecommunicators by using the Agents window. The prefix in the Internal context determines the type of conference or transfer

For custom and system contexts, you can define prefixes and suffixes for the **When Idle** and **When Connected** states. The **When Idle** state applies for any of the following conditions:

- ◆ When there is no call on a console.
- ◆ When there is no active line.
- ◆ When there is an active line with a dial tone.

The **When Connected** state applies when there is an active call on the console.

The **New Context** dialog box provides the following information for a custom context.

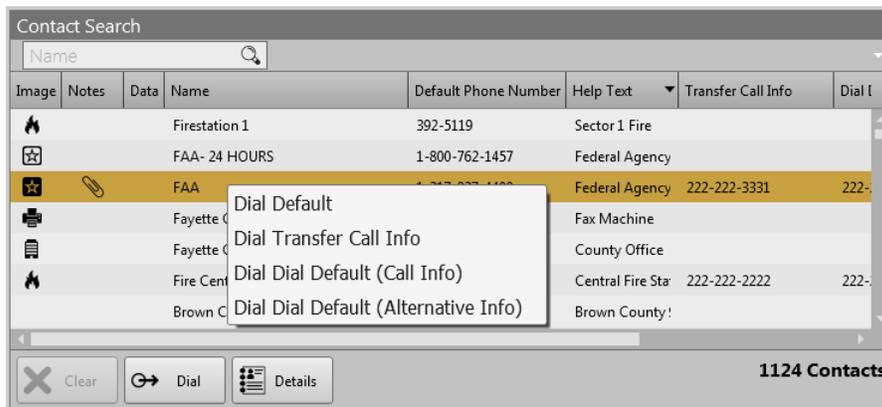
Information	Description
Name box	The name of the context that is displayed in the Contact dialog box.

Information	Description
Agency list	Lets you select the agency to which the context is assigned: you can assign it to all agencies or to a specific agency.
Prefixes and Suffixes area: <ul style="list-style-type: none"> ◆ Prefix when idle box ◆ Suffix when idle box ◆ Prefix when connected box ◆ Suffix when connected box 	Provides dialing instructions (such as C or T) that are dialed before (prefix) or after (suffix) a call is dialed on a line that is idle or on a line that is connected. Prefixes and suffixes can contain a maximum of 16 characters and symbols.
Use prefix and suffix by default check box	After this check box is selected, all prefixes and suffixes are enabled for all the contacts that the context applies to.
Allow override of dial commands check box	After this check box is selected, the context is overridden for a conference or transfer that is manually initiated before a contact is dialed.
Available Line Groups list box	Displays the list of line groups that can be assigned to a context. The list does not contain line groups that have been already assigned to a context.
Assigned Line Groups list box	Displays the list of line groups that are assigned to the context.

The Auto Dial Migration Utility enables administrators to import Auto Dial contexts and phone numbers to VESTA 9-1-1 custom contexts.

Contact Search window

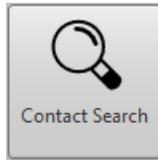
The **Contact Search** window lists all contacts that belong to the contact list that is mapped to a layout and can be used to search for contacts. The window can be customized by using the **Preferences** dialog box.



The **Contact Search** window can be available in a layout in the following ways:

- ◆ An open window.

- ◆ On a toolbar, as a button that opens the window.



- ◆ The **Contact Search** button can be mapped to the **Dial Directory** toolbar.
- ◆ As a shortcut that opens the window.

Windows that are opened from a button can be resized and moved, but cannot be docked.

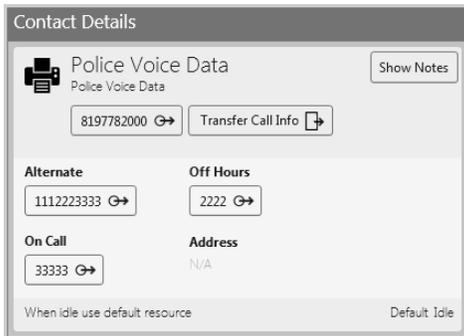
The Contact Search window can contain the assets and customizations that are listed in the following table.

Asset/Preference	Description
Image column	Displays the image if one is associated with the contact.
Notes column	Displays a Notes  icon if notes are available for a contact.
Data column	Displays a Data  icon if call information data can be sent to a data device associated with the contact.
Name column	Displays the name of the contact.
Default Phone Number column	Displays the default phone number for the contact.
Help Text column	Text that provides supplemental information about a contact, for example, Speaks Spanish.
Custom field columns	If the contact list contains custom fields, the information in these fields is represented as columns. The field label as defined in the Contact Manager is used as column header.
Quick Search fields area	Lets you select the check box for each search field that you want to display in the window.
Button Image Location list	Lets you select the location of the image on a button: top, bottom, left, right, image only, text only.
Button Font Size list	Lets you select the font size of text on a button.
Details button	Displays the Details window for a selected contact.
Clear button	The button clears the search results and displays the contact list entries.
Dial button	The button dials a selected contact.
Search Results Font area	Lets you select the format of text in columns.
Search Type area	Lets you select the Contains or Starts With option.
Logic Operator area	Lets you select the AND or OR logic operator.

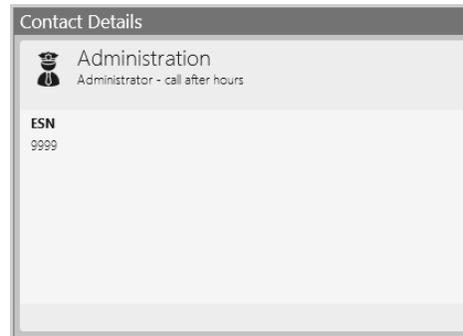
Asset/Preference	Description
Close window after dialing check box	Automatically closes the Contact Search window after a call is dialed.

Contact Details window

The Contact Details window can display the information for a contact or for a group. The window can be customized by using the **Preferences** dialog box.



Contact Details window — contact information



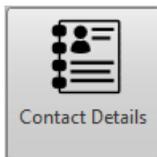
Contact Details window — group information



Contact Details window — contact notes

The **Contact Details** window can be available in a layout in the following ways:

- ◆ An open window.
- ◆ On a toolbar, as a button that opens the window.



- ◆ The **Details** button can be added to the **Dial Directory** and the **Contact Search** window.
- ◆ As a shortcut that opens the window.

Windows that are opened from a toolbar button can be resized and moved, but cannot be docked.

For a contact, the Contact Details window can contain the items and customizations that are listed in the following table.

Information/Preferences	Description
Contact name	The name of the contact as defined in the Contact Manager.
Image	Image for the contact as selected in the Contact Manager.
Context status bar	Dialing Resource status and Dialing Context status.
Help Text	Displays the help text for a contact.
Resource when Idle	Displays the Resource when Idle type, for example, use default resource.
Show Notes button	Available on the Details page. Displays the Notes page, which contains the information defined on the Notes tab of the Contact Manager.
Show Details button	Available on the Notes page. Displays the Details page.
Default Phone Number	Displays the default phone number for a contact.
Transfer Call Info button	Permits the transfer of data to a call data device associated with the called contact.
Custom fields	Displays the information for the custom fields that are defined for the contact list that is mapped to the layout.
Font area	Lets you select a format for text.

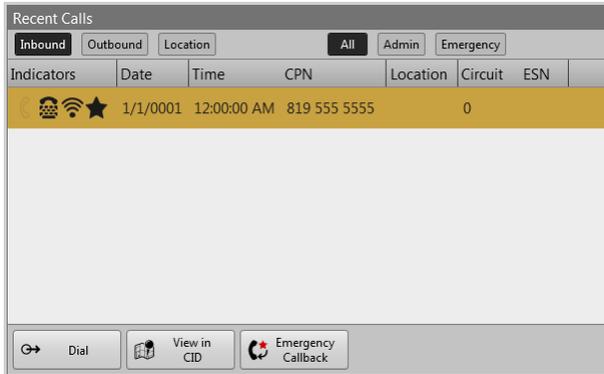
You can customize the font type, font size, font style, and color of text that is displayed in the column headers and in the columns.

For a group, the Contact Details window can contain the items and customizations that are listed in the following table.

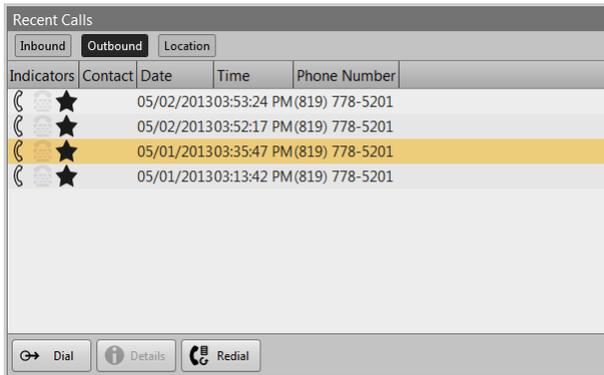
Information/Preferences	Description
Group name	The name of the group as defined in the Contact Manager.
Image	Image for the group as selected in the Contact Manager.
Help Text	Displays the help text for a group.
Members	The number of contacts in the group.
Font area	Lets you select a format for text.

Recent Calls window

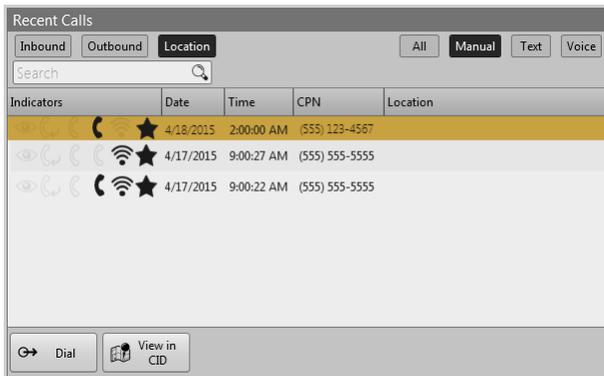
The Recent Calls window displays information for each unique voice calling number and text calling number that was received and answered at a console. The window can be customized by using the **Preferences** dialog box.



Inbound tab



Outbound tab



Location tab

The Recent Calls window displays information, such as date, time, and CPN, for the most recently answered voice calls and text calls and for the most recently placed outbound voice calls at a console. A maximum of 100 inbound and 100 outbound calls can be displayed.

You can perform the following actions in the Recent Calls window:

- ◆ Dial a number that is listed on the following tabs:
 - ◆ **Inbound** — includes abandoned calls.
 - ◆ **Outbound**
 - ◆ **Location**

- ◆ For a call that is listed on the **Inbound** tab or on the **Location** tab, display the call information in the Call Information Display window.
- ◆ For a call that is listed on the **Inbound** tab, make an emergency callback.
- ◆ For a call that is listed on the **Outbound** tab, display call details in the Details window.

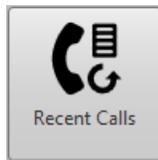
The entries on the **Inbound** tab, the **Outbound** tab, and the **Location** tab from a session can also be shared with the next user who logs into the console.

The following types of calls are not displayed in the Recent Calls window:

- ◆ Console-to-console calls.
- ◆ Agent-to-agent calls that are placed from the Agents window.
- ◆ Outbound calls with a phone number that contains the C, T, B, or N dial string.

The Recent Calls window can be available in a layout in the following ways:

- ◆ An open window.
- ◆ On a toolbar, as a button that opens the window.



- ◆ The **Recent Calls** button can be mapped to the **Dial Directory** toolbar.
- ◆ As a shortcut that opens the window.

Windows that are opened from a toolbar button can be resized and moved, but cannot be docked

Inbound tab

A maximum of 100 inbound calls can be displayed on the **Inbound** tab. The number of calls that can be displayed is configurable. By default, the most recently received call is placed at the top of the list.

You can sort the contents of the **Inbound** tab. The **Admin** button displays a list of all admin calls; the **Emergency** button displays a list of all emergency calls. The **All** button displays a list of all inbound calls.

You can customize the Recent Calls window to display the location information for callbacks in the Call Information Display window.

The **Inbound** tab of the Recent Calls window can contain the assets and customizations that are listed in the following table.

Asset/Preference	Description
Admin filter	Lists all inbound administrative calls.
All filter	Lists all voice and text emergency calls and administrative calls.
Emergency	Lists all inbound voice and text emergency calls.
Circuit column	Circuit on which the call arrived. For text calls it displays the name of the queue from which the text call was dequeued.
CPN column	Calling Party Number of a call for text and voice calls.

Asset/Preference	Description
Date column	<p>Displays the date (day/month/year) the session was picked up at the console.</p> <p>For calls received from the same calling number, the timestamp of the existing entry is updated with the most recent time.</p>
ESN column	The ESN for the call if applicable. Not available for text calls.
Indicators column	<p>Displays an icon that identifies the type of call:</p> <ul style="list-style-type: none">  Abandoned  Wireless  Emergency  TTY  Text  Voice
Location column	Concise location information of a caller for text and voice calls.
Time column	<p>Displays the time (hh:mm:ss) the session was picked up at the console.</p> <p>For calls received from the same calling number, the timestamp of the existing entry is updated with the most recent time.</p>
Button Image Location list	The location of the image on a button: top, bottom, left, right, image only, text only.
Button Font Size list	The font size of text in on the buttons.
Dial button	The button becomes available when an entry on the Inbound tab is selected. Clicking the button dials the phone number of the entry.
Emergency Callback button	Lets you callback the last received emergency voice call.
View in CID button	After you select an entry on the Inbound tab or the Location tab, clicking this button displays the information for this entry on the Recent tab of the Call Information Display window.
Font area	The format of text in columns
Maximum list size list	The Inbound tab can display a minimum of 1 and a maximum of 100 entries.

Asset/Preference	Description
Share list between users check box	The entries in the Recent Calls window are specific to a console for a telecommunicator. After you select this check box, the Inbound tab displays the most recent calls on the console for all telecommunicators that were logged onto the console up to the maximum number of calls that the window was configured to display. If this check box is not selected, the Inbound tab displays the most recent calls on the console for the logged-on telecommunicator. The tab is cleared if another telecommunicator logs on with a different user name.

Outbound tab

A maximum of 100 outbound calls can be displayed on the **Outbound** tab. The number of calls that can be displayed is configurable. By default, the most recently received call is placed at the top of the call list entries list.

The **Outbound** tab of the Recent Calls window can contain the assets listed in the following table.

The **Outbound** tab of the Recent Calls window can contain the assets and customizations that are listed in the following table.

Asset/Preference	Description
Contact column	The name of the button that was used when the number was previously dialed. The column entry is blank if the number was not dialed by a Contact button.
Date column	Displays the date (day/month/year) at which a call was placed.
Indicators column	Displays an icon that identifies the type of call: <ul style="list-style-type: none">  Emergency  Abandoned  TTY
Phone Number column	Calling Party Number of the call.
Time column	Displays the time (hh:mm:ss) at which a call was placed. For calls placed to the same calling number, the timestamp of the existing entry is updated with the most recent time.
Button Image Location list	The location of the image on a button: top, bottom, left, right, image only, text only.
Button Font Size list	Lets you select the font size of text on a button.

Asset/Preference	Description
Details button	Displays the Contact Details window. When an agent selects a call that was dialed by a contact, clicking this button displays the contact details of the selected contact. This window can display both contact and group details.
Dial button	The button becomes available when an entry on the Outbound tab is selected. Clicking the button dials the phone number of the entry.
Redial button	Redials the last outbound call.
Font area	Lets you select the format of text in columns.
Maximum list size list	The Outbound tab can display a minimum of 1 and a maximum of 100 entries.
Share list between users check box	The entries in the Recent Calls window are specific to a console for a telecommunicator. After you select this check box, the Inbound tab displays the most recent calls on the console for all telecommunicators that were logged onto the console up to the maximum number of calls that the window was configured to display. If you do not select this check box, the Inbound tab displays the most recent calls on the console for the logged on telecommunicator. The tab is cleared if another telecommunicator logs on with a different user name.

Location tab

The Recent Calls window provides access to the **Location**, which displays information about the previous calls for a given telecommunicator. Information for a maximum of 100 calls (the number is configurable) can be displayed.

The **Location** tab of the Recent Calls window can contain the assets that are listed in the following table.

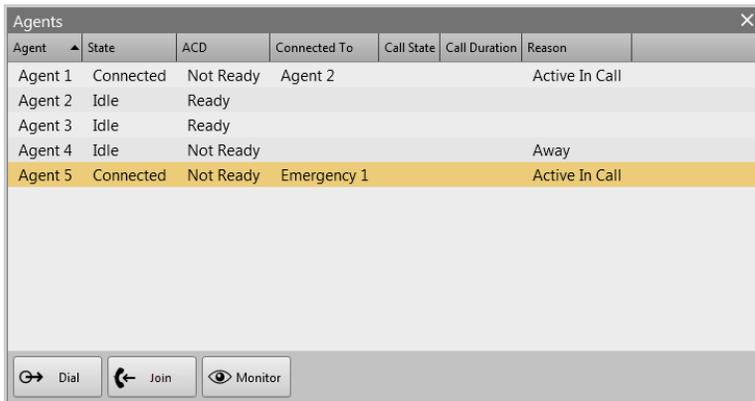
Asset/Preference	Description
All filter	Lists all calls
Manual filter	Lists all calls for which an ALI is manually requested
Text filter	Lists all text calls
Voice filter	Lists all voice calls including TTY calls
Call Type column	Displays the type of call.
CPN column	Displays the CPN column which indicates the calling party's phone number.
Date column	Displays the Date column, which indicates the date that the call arrived. Date format: taken from the operating system, for example, mm:dd:yyyy

Asset/Preference	Description
Indicator column	<p>Displays an icon that identifies the type of call for a call record:</p> <ul style="list-style-type: none">  Emergency  Wireless  TTY  Voice  Text  Abandoned  Abandoned Call Callback  Monitored  Idle (indicates manual ALI request on an idle console)
Location column	Displays location information for a call while the call is connected.
Time column	Displays the Time column, which indicates the time that the call arrived.
Button Image Location list	The location of the image on a button: top, bottom, left, right, image only, text only.
Button Font Size list	Controls the size of the font that is displayed on the buttons of the Recent Calls window. Default size = 9
Dial button	Dials the selected number. Can display the call information that was received when the call was originally processed in the Call Information Display.
View in CID button	Displays the call information that was received when the call was originally processed in the Recent tab of the Call Information Display.
Font area	Lets you select the format of text in columns.
Maximum list size	Determines the number of entries that can be displayed on the Location tab. The tab can display a maximum of 100 entries.

Asset/Preference	Description
Share list between users check box	<p>Determines whether or not the information on the Location tab is shared between all call takers that use the console or if only the logged on call taker's information is displayed. The entries in the list are specific to a console for a call taker.</p> <p>If you select this check box, the list displays the most recent calls on the console for all call takers that were logged onto the console up to the maximum number of calls that the window was configured to display.</p> <p>If you do not select this check box, the list displays the most recent calls on the console for the logged on call taker. When a different call taker logs on, the list will be empty.</p>

Agents window

The **Agents** window lists all telecommunicators that are logged on to your agency and lets you place voice calls to them. The window can be customized by using the **Preferences** dialog box.



The **Agents** window provides information about an agent, such as the role of the agent, the state of their console, and the ACD state of their console among others. A supervisor can also monitor an agent during an active voice call and can participate in that call. If the system is configured to send a signal tone, an agent can be signaled at the start of the monitoring session by a signal tone that they are being monitored.

The Agents window can have the assets and customizations that are listed in the following table.

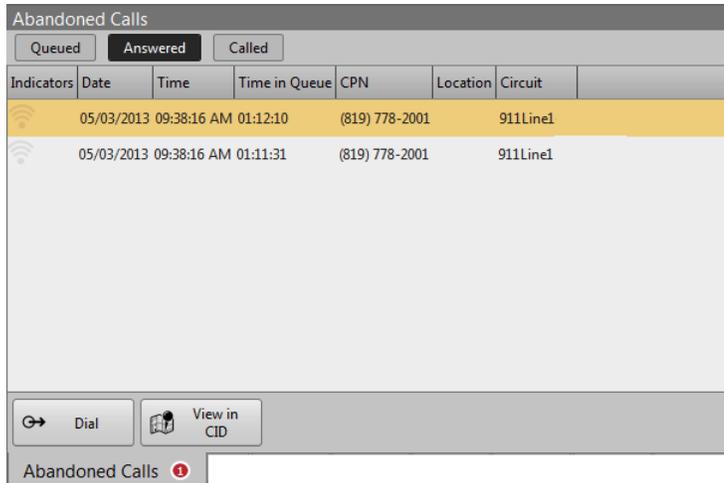
Asset/Preference	Description
Agent column	Displays the name of the logged-on telecommunicator.

Asset/Preference	Description
Connected To column	<p>Displays one of the following items of information:</p> <ul style="list-style-type: none"> ◆ Display name of the other telecommunicator — for internal calls to another console, or to a logged on IP phone. ◆ Line name or gateway — for external calls. ◆ IP phone label — for an IP phone that is not logged in. ◆ Multi-party — for the initiator of a conference call. ◆ Blank — when the telecommunicator is not participating in any calls. During agent monitoring, the Connected To column on a monitoring user's console is blank. <p>If the call is a monitored call, the following information is displayed:</p> <ul style="list-style-type: none"> ◆ Internal Call — agent name or (if the agent name is unavailable) console name ◆ External Call — line name of an inbound call or dialed number (including any prefixes/suffixes) of an outbound call ◆ Conference Call — Displays Multi-Party.
State column	<p>Indicates the status of the telecommunicator as either Idle or Connected. In an Idle state, the telecommunicator is inactive on the console, on Hold, off-hook, or has a ringing call. Indicates also the Idle or Connected states of a text call.</p> <p>A user can monitor a telecommunicator with Idle status, but the user cannot hear or speak to the telecommunicator. After the telecommunicator is connected, the Listening and Talking modes become active.</p>
Info column	Displays information about the telecommunicator as defined in DDS Configurator: for example, special skills information such as knowledge of a language.
Role column	Displays the name of the role with which the user logged on to the console.
Console column	Displays the name of the console that the telecommunicator is logged onto.
ACD column	<p>Displays ACD content, depending on the configuration:</p> <ul style="list-style-type: none"> ◆ If configured to show the three ACD readiness states of the telecommunicator, the column shows Ready, Not Ready and Not Available. ◆ If configured to show the two ACD readiness states of the telecommunicator, the column shows Ready or Not Ready status for receiving calls. If the console is in a not available state, the button shows Ready.
Type column	Identifies the type of voice call: Emergency (inbound, abandoned, call back), Admin (inbound or outbound), Internal (to or from another console or IP phone).

Asset/Preference	Description
Number column	Displays one of following items of information, if the call is in a talking state: <ul style="list-style-type: none"> ◆ ANI — for emergency calls. ◆ CPN — for inbound admin calls. ◆ Agent extension — for internal calls. ◆ The word <i>Outbound</i> — for outbound calls. ◆ Blank — there is no call in the talking state.
Call State column	Displays the state of the current call segment: Connected , Held (one or more calls held by the telecommunicator), Ringing (one or more ringing calls on a PCAs), Idle .
Call Duration column	Shows the period (hh:mm:ss) in real time by which the current call has been in the system.
Reason column	Displays the reason for the current not available or not ready state of the telecommunicator.
Button Image Location list	The location of the image on a button: top, bottom, left, right, image only, text only.
Button Font Size list	Lets you select the font size of text on a button.
Dial button	Initiates a call to the selected telecommunicator.
Join button	Joins the call of the selected telecommunicator.
Monitor button	Activates monitoring of the selected telecommunicator and displays the following items: <ul style="list-style-type: none"> ◆ Listening — in listening mode, the user can listen to the participants on the call but cannot be heard. The user's audio is muted. Listening mode is invoked when monitoring is activated. ◆ Talking — in talking mode, the user can talk to and listen to all participants on the monitored call. ◆ Monitor status area — the area displays error messages (for example, the role does not allow monitoring) and monitor status messages (for example, Monitoring Agent 3). Error messages display for a maximum of five seconds unless replaced during that period with another message or the user clicks the message area to dismiss the message.
Font area	Lets you select the format of text in columns.

Abandoned Calls window

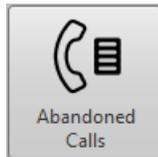
The **Abandoned Calls** window displays information such as date, time, and **CPN**, for queued, answered, and called-back abandoned voice calls at a console. The window can be customized by using the **Preferences** dialog box.



When the **Abandoned Calls** window is tabbed to another window (for example, the **Recent Calls** window), an indicator displays the number of queued abandoned calls on the window tab. No number is displayed if the queue count is zero. Full call information for abandoned calls can be displayed in the **Call Information Display** window.

The **Abandoned Calls** window can be available in a layout in the following ways:

- ◆ An open window.
- ◆ On a toolbar, as a button that opens the window.



- ◆ The **Abandoned Calls** button can be mapped to the **Dial Directory** toolbar.
- ◆ As a shortcut that opens the window.

Windows that are opened from a button can be resized and moved, but cannot be docked.

The **Queued** tab of the **Abandoned Calls** window can contain the assets and customizations that are listed in the following table.

Asset/Preference	Description
Indicators column	Displays icons that provide additional information about the call. Possible indicator is:  Wireless
Date column	The date that the call was received. Date format: Windows Regional settings for Short Date
Time column	The time that the call was received. Time format: Windows Regional settings for Long Time
Time in Queue column	The time that the call has been in the abandoned call queue. Time in Queue format: hh:mm:ss

Asset/Preference	Description
CPN column	The Calling Party Number of a call. For calls that have a pANI/ESRx , it is the callback number that is displayed. The value can change after a location information lookup.
Location column	The concise location information for the caller, as configured in conciseali.config.xml .
Circuit column	The circuit on which the call was received.
ESN column	Displays the ESN associated with the CPN , if available.
Button Image Location list	Controls the location of the image that appears on the Dial and View in CID buttons: top, bottom, left, right, image only, text only.
Button Font Size list	Lets you select the font size of text on a button.
Dial button	Dials the phone number of a selected entry. When a callback is performed from the Queued tab, the information is displayed on the Current tab of the Call Information Display window.
View in CID button	Displays the location information for a selected entry on the Recent tab of the Call Information Display window. The location information is displayed in the reverse color scheme to show that it is not a current call.
Font area	Lets you select the format of text in columns.

The **Answered** tab of the Abandoned Calls window can contain the assets and customizations that are listed in the following table.

Asset/Preference	Description
Indicators column	Displays icons that provide additional information about the call. Possible indicators are: <div style="display: flex; align-items: center; margin-top: 5px;">  Wireless </div> <div style="display: flex; align-items: center; margin-top: 5px;">  The call included a TTY conversation. </div>
Date column	The date that the call was received. Date format: Windows Regional settings for Short Date
Time column	The time that the call was received. Time format: Windows Regional settings for Long Time
CPN column	Calling Party Number of a call.
Location column	The concise location information for the caller, as configured in conciseali.config.xml . If the call does not have location information, but does have a calling party name, then the calling party name is displayed.
Circuit column	The circuit on which the call was received.
ESN column	Displays the ESN associated with the CPN , if available.
Button Font Size list	Lets you select the font size of text on a button.

Asset/Preference	Description
Button Image Location list	Controls the location of the image that appears on the Dial and View in CID buttons: top, bottom, left, right, image only, text only.
Font area	Lets you select the format of text in columns.
Dial button	<p>The button becomes available when an entry on the Answered tab is selected. Click the button to dial the phone number of the entry. You can also double-click the entry to place the call.</p> <p>When a callback is performed from the Answered tab, the location information is displayed on the Current tab of the Call Information Display window.</p>
View in CID button	Displays the location information for a selected entry on the Recent tab in the Call Information Display window. The location information is displayed in the reverse color scheme to show that it is not a current call.
List area	Lets you set a maximum number of abandoned calls that are listed on the Answered tab.
Maximum list size list	You can specify a minimum of one entry up to a maximum of 100 entries.
Share list between users check box	Lets you display the most recent abandoned calls for all telecommunicators that are logged into the console. The number of abandoned calls is set by the Maximum list size .

The **Called** tab of the Abandoned Calls window can contain the assets and customizations that are listed in the following table.

Asset/Preference	Description
Indicators column	<p>Displays icons that provide additional information about a call:</p> <p> Wireless</p> <p> The call included a TTY conversation.</p>
Date column	<p>The date that the call was received.</p> <p>Date format: Windows Regional settings for Short Date</p>
Time column	<p>The time that the call was received.</p> <p>Time format: Windows Regional settings for Long Time</p>
CPN column	Calling Party Number of a call.
Button Image Location list	Controls the location of the image that appears on the Dial button: top, bottom, left, right, image only, text only.
Button Font Size list	Lets you select the font size of text on a button.
Dial button	<p>Dial the phone number for the selected entry.</p> <p>When a callback is performed from the Called tab, the location information is displayed on the Current tab of the Call Information Display window.</p>

Asset/Preference	Description
Font area	Lets you select the format of text in columns.
List area	Lets you set a maximum number of abandoned calls that are listed on the Called tab.
Maximum list size list	You can specify a minimum of one entry up to a maximum of 100 entries.
Share list between users check box	Lets you display the most recent abandoned calls for all telecommunicators that are logged into the console. The number of abandoned calls is set by the Maximum list size .

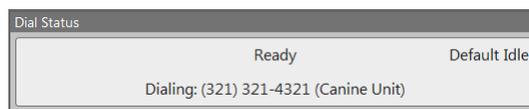
The **Handling** tab on the **Abandoned Calls** panel of the **Preferences** dialog box provides the following customizations for the Abandoned Calls window.

Asset	Description
Abandoned Call Queue Count list	<p>Available options are:</p> <ul style="list-style-type: none"> ◆ All Calls — Allows telecommunicators to call back emergency calls presented on all shared call appearances. ◆ Mapped SCAs — Allows telecommunicators to call back only those emergency calls that were originally delivered to shared call appearances that are mapped to the current layout. <p>Default value = All Calls</p>
Present Abandoned Calls on the In Calls check box	<p>This option is available only if the In Calls button is included in the Console layout. Select this check box to display abandoned calls in the Answered tab of the Abandoned Calls window.</p> <p>Default value = Enabled</p>
In Calls Priority list	<p>Available options are:</p> <ul style="list-style-type: none"> ◆ ACD Calls — All ACD calls are answered prior to abandoned calls presented on the In Calls. ◆ Abandoned Calls — All abandoned calls are answered prior to ACD calls presented on the In Calls. ◆ Alternating — Abandoned calls are offered every other call, alternating with ACD calls. <p>Default value = ACD calls</p> <p>These options are only available if the Present Abandoned Calls on the In Calls check box is selected.</p>
Wait Time for ACD Calls list	<p>Determines how long to wait before a call of lower priority is presented. This option is available only if the Present Abandoned Calls on the In Calls check box is selected.</p> <p>Allowed values = 1 to 10 seconds</p> <p>Default value = 3 seconds</p>

Asset	Description
Location information for callback check box	<p>Select this check box to display location information for abandoned call callbacks in the Call Information Display window.</p> <p>If the check box is cleared, the abandoned call location information is not displayed in the Call Information Display window.</p> <p>Default = Check box is selected</p>

Dial Status window

The **Dial Status** window displays information for calls that are dialed from the **Dial Directory**, the **Agents** window, the **Dial Pad**, the **Contact Search** window, and the **Recent Calls** window. Messages for text-call transfers are also displayed. The window can be customized by using the **Preferences** dialog box.

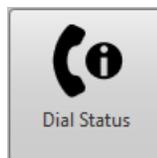


When the following **ACD** readiness controls are configured on the console, the readiness state of a console that receives distributed calls is also indicated:

- ◆ **Ready** button — Ready or Not Ready states
- ◆ **ACD Readiness** button — Ready, Not Ready, Not Available states

The **Dial Status** window can be available in a layout in the following ways:

- ◆ An open window.
- ◆ On a toolbar, as a button that opens the window.



- ◆ As a shortcut that opens the window.

Windows that are opened from a button can be resized and moved, but cannot be docked to other windows or containers.

Event notifications

If you are a VESTA 9-1-1 administrator, you can configure audio and visual event notifications that might require the attention of a telecommunicator. The **Enable Customization** mode of the console provides access to event notification settings.

You can customize the color of a tab for a hidden window or container that contains an event, such as an incoming emergency call, to indicate this event. You can also customize the color of the text that is displayed on a flagged tab. The default color for the text is white. Priority is defined in the **Preferences** dialog box.



The following assets can have event indicators on a tab:

- ◆ Containers that contain one or more call appearances, for example, a container that contains the in-calls call appearance.
- ◆ Console windows that contain information about a call, for example, the **Call Information Display** window.

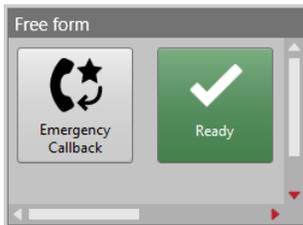


Events on a single undocked window or container are not indicated by indicators.

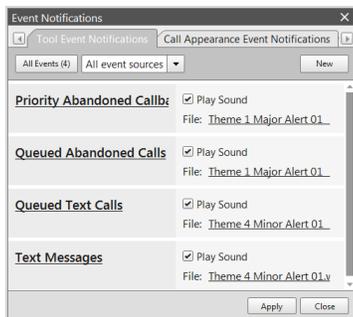
Note

You can prioritize an indicator relative to the other indicators. For example, if two events concurrently arrive at a console, the event with the higher priority is indicated on the console.

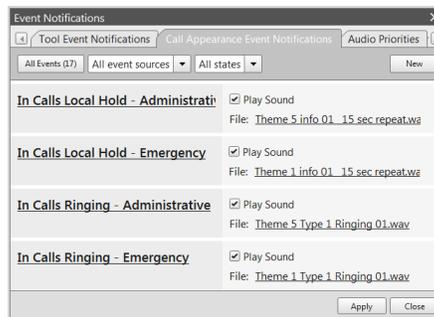
For a container, a color indicator can also appear on a scroll bar when the event is hidden from view. The indicator points in the direction of the event.



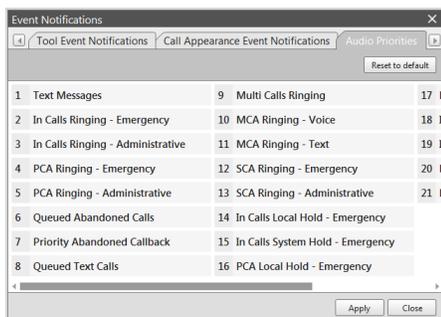
The **Tool Event Notifications** and **Call Appearance Event Notifications** tabs display the list of pre-defined and new notifications. The **Audio Priorities** tab lets you prioritize the event notifications by dragging an entry to a different location in the notification list. The **Alerts** tab lets you customize the visual notifications and audible notifications in the **Queue Display** window. The system provides four default event notifications for tools and 17 default event notifications for call appearances. The tabs also display the name of the sound file that is assigned to a notification.



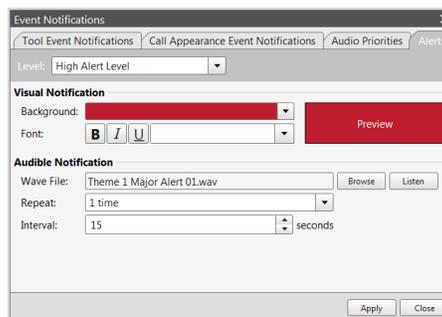
Tool Event Notification tab



Call Appearance Event Notification tab

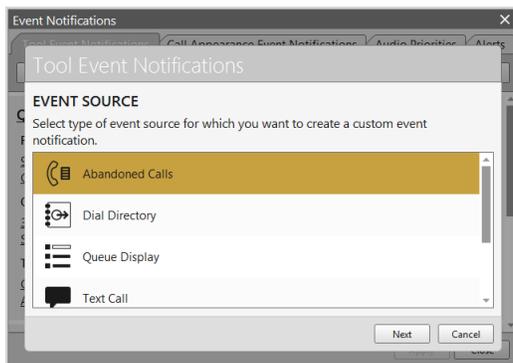


Audio Priorities tab



Alerts tab

A wizard guides you through the process of creating custom audible alerts. The following graphic shows the first page of the wizard for creating a tool event notification. The selected event source is Abandoned Calls. The **Next** and **Back** buttons let you navigate through the wizard.



Audio features

Audio features let telecommunicators

- ◆ Adjust and manage their volume settings
- ◆ Manage multiple audio sources

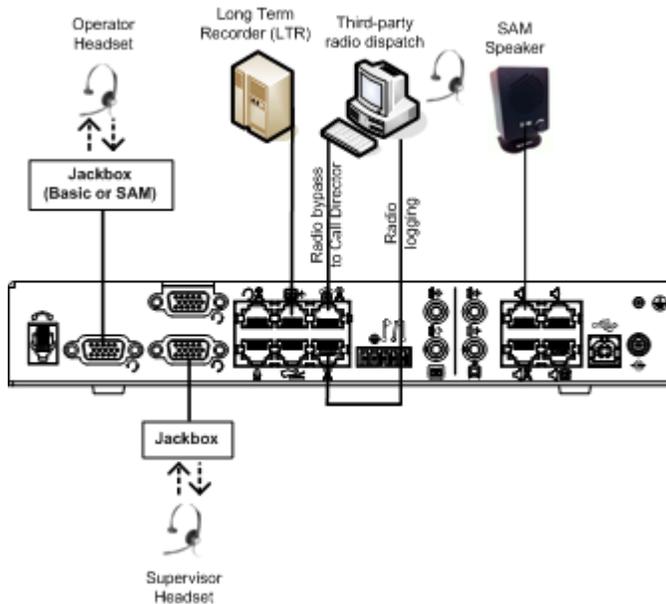
The **SAM** is a device that provides connections to external recording and audio devices.

Sound Arbitration Module

The SAM is a hardware device that manages the audio and controls of external audio devices and equipment. The SAM system is comprised of the module itself, a headset/handset unit, an external unselected speaker, and a maximum of three jackboxes (telecommunicator, supervisor, trainer).



These components connect the module with the rest of the console components, such as the operator headset, supervisor headset, Long Term Recorder (LTR), and the rest of the system.



Related Links

[Master Volume window](#) on page 133

[Instant Recall Recorder](#) on page 190

[Mute All](#) on page 135

Audio 1/Audio 2

A maximum of two analog auxiliary audio devices can be connected to the [SAM](#): for example, a television feed or a MP3 player. Auxiliary audio has the following rules:

- ◆ Telecommunicators can listen to only one of them at a time.
- ◆ Telecommunicators can only hear them when the console is idle.
- ◆ When a call arrives on the console, the auxiliary audio is automatically interrupted. The audio can be configured to resume automatically or manually at the end of the call.

Two buttons can be deployed to switch between two auxiliary audio devices: **Audio 1** and **Audio 2**.

In the following example, the device on **Audio 2** is selected to be heard on the console. Clicking **Audio 1** switches the audio source.



Telecommunicators can adjust the volume of the selected auxiliary audio device on the **Aux Audio** tab of the **Master Volume** window.

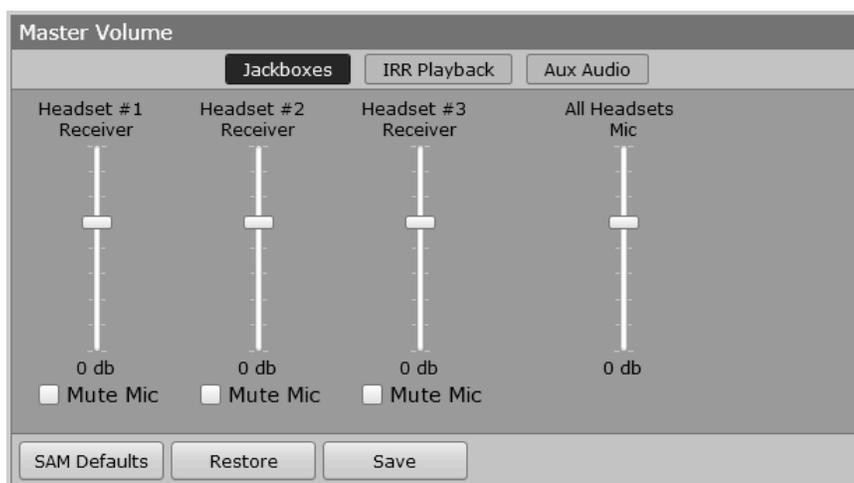
Related Links

[Sound Arbitration Module](#) on page 132

[Master Volume window](#) on page 133

Master Volume window

The Master Volume window provides volume and muting control over telecommunicator headsets, microphones, call recordings, and auxiliary audio devices under the **Jackboxes**, **IRR Playback**, and **Aux Audio** tabs.



The volume settings that a user sets in the **Master Volume** window are saved when a user logs off from the console. The next time a user logs on to a console using the same user name, the same volume settings are available.

The Master Volume window can be added to a layout in the following ways:

- ◆ An open window.
- ◆ On a toolbar, as a button that opens the window.



- ◆ As a shortcut that opens the window.

For each of the volume setting tabs, a telecommunicator can set the volume levels and save a customized volume settings by using the following buttons:

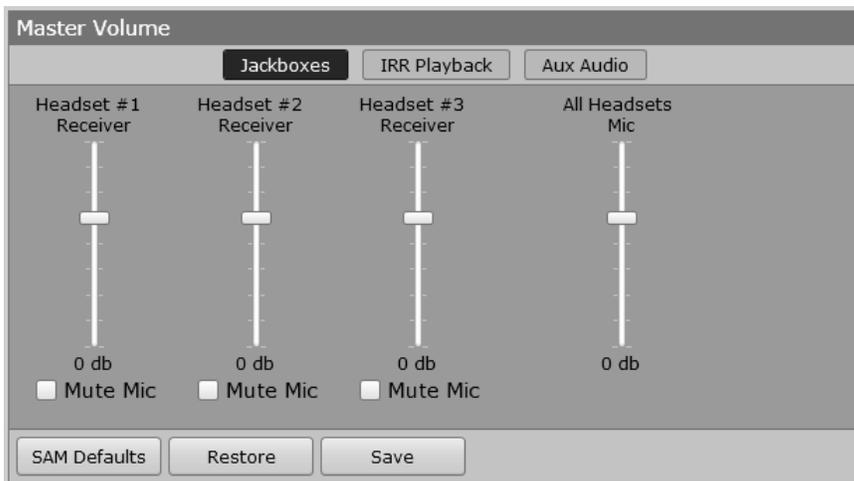
- ◆ **SAM Defaults** — restores the default volume levels set by the SAM.
- ◆ **Restore** — restores the saved volume levels set by user and stored as a centralized configuration setting. By default, this volume level is used when the telecommunicator logs on a console.
- ◆ **Save** — saves the current volume settings for the user as a centralized configuration setting.

For example, in the **Jackboxes** tab, a telecommunicator can make changes to the volume level of a headset using the slider and enable mute for a microphone on another jackbox by clicking **Save**. If any of these settings are changed, clicking **Restore** returns them to their saved state.

Clicking **SAM Defaults** applies the default settings configured in the SAM.

Jackboxes

The **Jackboxes** tab contains sliders for volume levels for headsets connected to individual console jackboxes. A console can have multiple jackboxes: for example, one each for a telecommunicator, a supervisor, and a trainer. Selecting a **Mute Mic** check box mutes the audio for each microphone. When mute is applied to a jackbox with the headset muted, a red LED light appears on the SAM jackbox (The Basic jackbox does not have an LED light.). A single volume slider adjusts the levels for all microphones.



IRR Playback

The playback volume levels for the Instant Recall Recorder can be adjusted from the **IRR Playback** tab. A telecommunicator can enable the output by selecting the **Enable** check box for both speakers and all headsets.



Aux Audio

A telecommunicator can have a maximum of two additional analog audio devices connected to the SAM: for example, an auxiliary audio input, such as a television feed or MP3 player. One of the two audio devices can be heard by the telecommunicator at any given time by clicking either the **Audio 1** button or the **Audio 2** button. The **Aux Audio** tab contains a volume slider for the currently-selected auxiliary audio device. The volume is auto-muted when a call is answered.



Related Links

[Mute All](#) on page 135

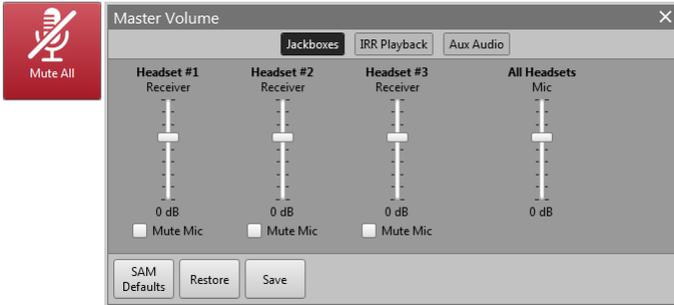
[Sound Arbitration Module](#) on page 132

Mute All

The **Mute All** button mutes the microphones connected to all the jackboxes.



Clicking the **Mute All** button has the same effect as pressing the **Mute** button on all jackboxes.



Related Links

[Master Volume window](#) on page 133

[Sound Arbitration Module](#) on page 132

Greetings Manager

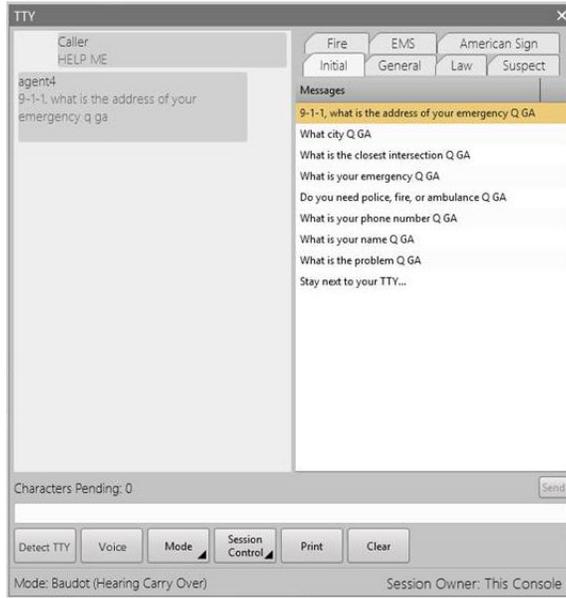
The **Greetings Manager** allows you to record greetings that will automatically play to emergency and administrative callers. Once you have recorded your greeting, you can play it back, re-record it, delete it, and save it to the [Centralized Configurator Database \(CCDB\)](#). Only the person who recorded the greeting can listen to and delete it.

TTY window

You can communicate with the hard-of-hearing and speech impaired using the **TTY** (Teletypewriter) window. TTY is also known as TDD (Telecommunications Device for the Deaf), and it provides hard-of-hearing and speech-impaired people with the ability to communicate over the telephone system. You can answer and respond to calls on the TTY, as well as manage TTY calls through transfers and conferences.

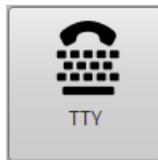
You can also choose the mode the TTY call is using depending on the caller's hearing or speech impairment.

You can communicate with callers who are hard of hearing and callers who are unable to speak by using the **TTY** window.



The TTY window can be available in a layout in the following ways:

- ◆ An open window.
- ◆ On a toolbar, as a button that opens the window.



- ◆ As a shortcut that opens the window.

Windows that are opened from a toolbar button can be resized and moved, but cannot be docked.

The TTY window provides the following information.

Asset	Description
Conversation pane	The area in which messages are exchanged between the caller and a telecommunicator. All entered text displays in the pane. Upper case type shows the TTY caller text; lower case type shows the text that has been entered by the telecommunicator.
Characters Pending	The number of characters in the TTY message that are waiting to be sent to the caller.
Message text box	The point of entry for manually entering TTY messages.
Detect TTY button	If the automatic TTY detection does not recognize the TTY call, you can start a TTY session with this button. By default, the TTY detection is activated.
Voice button	Changes the call to a regular voice call.

Asset	Description
Mode menu button	<p>Lists the following TTY modes:</p> <ul style="list-style-type: none"> ◆ Baudot (HCO) — On Baudot calls in Hearing Carry Over (HCO) mode, the TTY caller can hear but is speech impaired. The headset is active, but the microphone is muted: for example, a stroke victim. ◆ Baudot (VCO) — On Baudot calls in Voice Carry Over (VCO) mode, the TTY caller cannot hear but can speak. The microphone can transmit, and the headset is muted. ◆ ASCII Answer — Puts the conversation in TTY mode, in which the telecommunicator can answer TTY calls. ◆ ASCII Originate — Telecommunicator can initiate a TTY call.
Session Control button	<p>A telecommunicator can transfer control of a TTY call to another telecommunicator in conference and request control of a TTY call:</p> <ul style="list-style-type: none"> ◆ Relinquish Session Control — During a conference TTY call, the telecommunicator can give up control of a TTY call to another telecommunicator. The button is only active on the console of the telecommunicator who is in control. The TTY window stays open on the console after control has been transferred. ◆ Request Session Control — A telecommunicator who is participating on a conferenced TTY call and does not have control over the TTY session can request session control. The button is active when no telecommunicator has control over the call: that is, when the telecommunicator who has had control over the call relinquishes it and no other telecommunicator has assumed ownership. The first telecommunicator who clicks the button becomes the session owner.
Print button	<p>Prints the TTY messages currently displayed in the TTY window.</p>
Clear button	<p>Removes all TTY messages in the window.</p>
Status area	<ul style="list-style-type: none"> ◆ Mode indicators <ul style="list-style-type: none"> ◆ Baudot (Hearing Carry Over) ◆ Baudot (Voice Carry Over) ◆ ASCII Answer ◆ ASCII Originate ◆ Session Owner can be <ul style="list-style-type: none"> ◆ This Console — The current console is the TTY call session owner. ◆ Console identifier — For example, name or console ID. ◆ None — No telecommunicator currently owns the session. The Request Session Control button becomes available to all call takers.
Send button	<p>Sends any typed messages from the Message box or selected pre-programmed message.</p>

Asset	Description
Pre-programmed messages	Frequently-used TTY messages can be quickly sent to TTY callers.
Pre-programmed message categories	Buttons open the window to show categories of pre-programmed messages: for example, Police, Fire, Medical.

Supervisory features

The console contains features that are related to the supervisory function agent monitoring.

Agent monitoring

The **Monitor** button in the Agents window displays the **Listening** button, the **Talking** button, and the monitor status area. A user can listen in on or talk on a maximum of two voice calls at the same time. Permission to monitor a telecommunicator is configured in the role settings of the target agent.

Clicking the **Monitor** button when a telecommunicator is selected in the agent list displays the **Listening** and **Talking** buttons and invokes the **Listening** mode automatically.

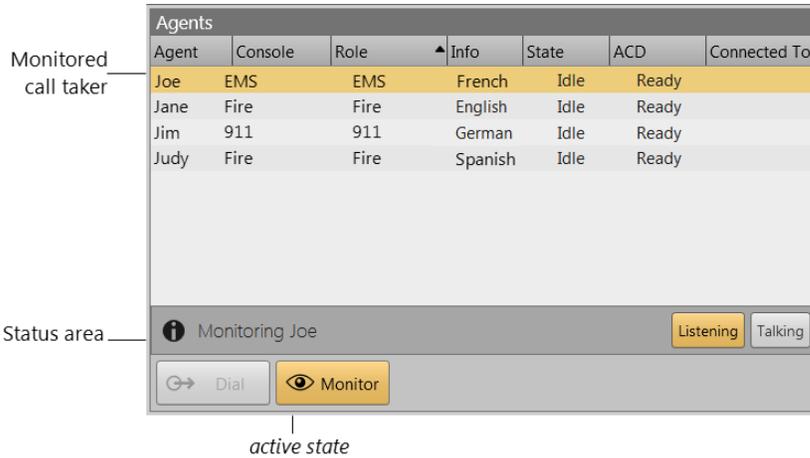
Clicking the **Monitor** button during monitoring switches off monitoring.

After monitoring starts, the monitoring users console enters the **Not Ready** mode for [ACD](#) calls. Answering a call cancels the monitoring session. If configured, a tone may be played to indicate to a telecommunicator when a user joins a call for monitoring purposes.

Monitoring is not allowed during the following user console states:

- ◆ On an active call (answered, picked up, joined)
- ◆ Dialing a call
- ◆ Recording a greeting
- ◆ During a conference or transfer, including Flash transfers and conferences (allowed after a blind transfer is complete)
- ◆ When a [PCA](#) or [SCA](#) is selected and a dial tone is played

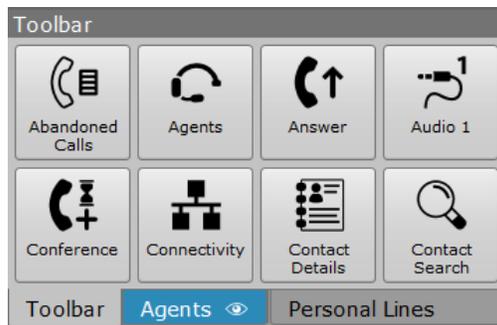
The **Monitor** button changes to the active state color to indicate that the selected telecommunicator is being monitored.



Note

The user can continue to monitor even after a telecommunicator has completed a call. The audio is suspended until the next call is taken by the telecommunicator.

If a call that is monitored is on a hidden tab, the Agent Monitor indicator is displayed on the tab.



The Agent Monitoring feature can be configured to play a tone to the telecommunicator at the start of the monitoring session.

During call monitoring, the **Call Information Display** window displays the calling party number, the calling party name, and the location information of the call. The IRR recording starts on the console of the user.

When a user is monitoring a telecommunicator, call information received at the console is displayed in the **Call Information Display** window. An indicator that the call information is for a monitored call is also displayed in the **Call Information Display** window.

Console information

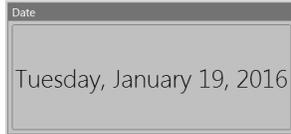
Administrators can add the windows to the layout to provide a variety of information on the console:

- ◆ Date and time
- ◆ Connectivity information
- ◆ Console and telecommunicator information
- ◆ Identification of the call center through customer branding of the layout
- ◆ System log notification messages

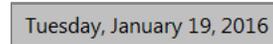
Administrators can also add time and date, connectivity, and information controls to the status area of the layout.

Date

The date can be displayed in the **Date** window. The information can also be displayed on the console status bar. The console uses the format that the Windows operating system uses to display the date.



Date window



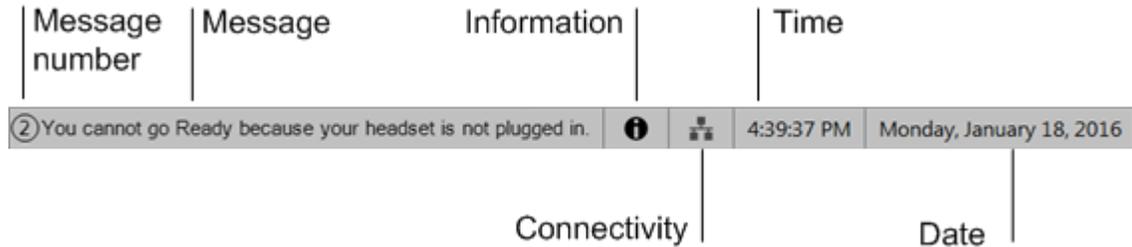
Status bar

The date information can be available in a layout in the following ways:

- ◆ An open window.
- ◆ On a toolbar, as a button that opens the window.



- ◆ The date can be displayed on the console status bar.
- ◆ As a shortcut that opens the window.



Windows that are opened from a toolbar button can be resized and moved, but cannot be docked.

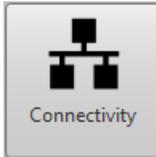
Connectivity

The connectivity status of a console and its subsystems can be displayed in the Connectivity window and the **Connectivity** panel.

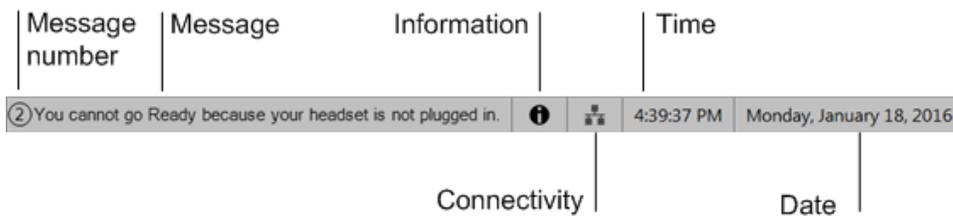
Connectivity			
Subsystem	Status	Details	
ASN CS	Connected		
ASN Instance 1	Active Peered	10.2.16.128 (Node 1)	
ASN Instance 2	Active Peered	10.2.16.129 (Node 2)	
DDS A	Active Alone	172.20.133.6	
 DDS B	Down	172.20.133.7	
MDS A	Active	172.20.133.6	
MDS B	Inactive	172.20.133.7	
 EIM node 1	Active Alone		
 EIM node 2	Faulty Alone		
SAM	Connected		

Connectivity information can be available in a layout in the following ways:

- ◆ An open window.
- ◆ On a toolbar, as a button that opens the window.



- ◆ The **Connectivity** status bar button can be added to the console status bar. This button displays the **Connectivity** panel.
- ◆ As a shortcut that opens the window.



Windows that are opened from a toolbar button can be resized and moved, but cannot be docked.

If an error has occurred on at least one of the subsystems, the **Connectivity** status bar button pulsates between the connected icon and the error icon.

The Connectivity window and the **Connectivity** panel provide the following information.

	
No subsystems are down (Info icon)	At least one subsystem is down (Error icon)

The level of severity for connectivity status messages appear as icons in a column in the **Connectivity** window, on the **Connectivity** button, and on the status bar. The following table contains the severity icons and a description for each.

Window indicator	Severity level	Description
	Error	Displays when a subsystem is disconnected or when a subsystem is connecting.
	Warning	Displays when a subsystem has one of the following statuses: <ul style="list-style-type: none"> ◆ Unknown ◆ Active Peered Busied Out ◆ Active Alone ◆ Active Alone Busied Out

Toolbar button	Severity level	Description
	Error	Displays when at least one indicator in the Connectivity window shows an error.
	Warning	Displays when at least one indicator in the Connectivity window displays a warning and no errors.

Status bar indicators	Severity level	Description
 	Error	Information and error icons alternate when at least one indicator in the Connectivity window shows an error.
 	Warning	Information and error icons alternate when at least one indicator in the Connectivity window displays a warning and no errors.

The following table lists the subsystems and the connectivity information that is displayed.

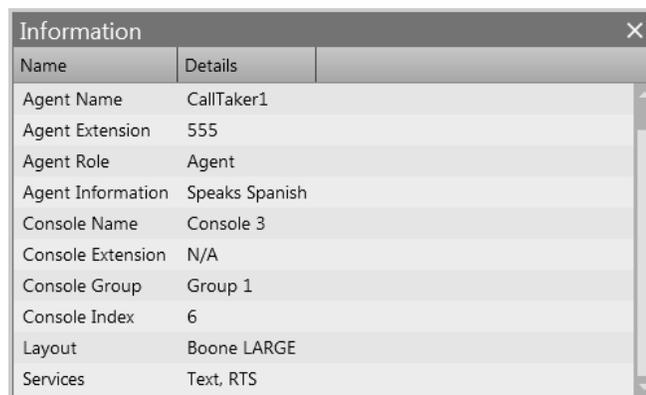
Subsystem	Status	Severity level	Information
ASN CS	Connected	Info	
	Disconnected	Error	
	Not Configured	Warning	The telecommunicator interface is attempting to connect to a real-time statistics adapter that is not configured.
Advanced Services Node 1	Connected	Info	IP address or name

Subsystem	Status	Severity level	Information
	Active Peered	Info	
	Not Authorized	Info	
	Not Configured	Info	
	Connecting	Error	IP address or name
	Active Alone	Warning	
	Unknown	Warning	
	Busied Out	Warning	Active peered but in maintenance mode
Advanced Services Node 2	Connected	Info	IP address or name
	Active Peered	Info	
	Not Authorized	Info	
	Not Configured	Info	
	Connecting	Error	IP address or name
	Active Alone	Warning	
	Unknown	Warning	
	Busied Out	Warning	Active peered but in maintenance mode
EIM node 1	Active	Info	
	Disabled	Info	
	Faulty	Error	
EIM node 2	Active	Info	
	Disabled	Info	
	Faulty	Error	
MDS A	Active	Info	Server IP address
	Down	Error	
MDS B	Active	Info	Server IP address
	Inactive	Info	
	Down	Error	
DDS A	Active Hot	Info	Server IP address
	Inactive Hot	Info	
	Active Replicate	Info	
	Inactive Replicate	Info	

Subsystem	Status	Severity level	Information
	Active Alone	Warning	Server IP address
	Down	Error	
DDS B	Active Hot	Info	Server IP address
	Inactive Hot	Info	
	Active Replicate	Info	
	Inactive Replicate	Info	
	Active Alone	Warning	Server IP address
	Down	Error	

Console and telecommunicator information

Information about the logged-on telecommunicator and the console to which the telecommunicator is logged on can be displayed in the Information window and the **Information** panel, which is accessible from the status bar.

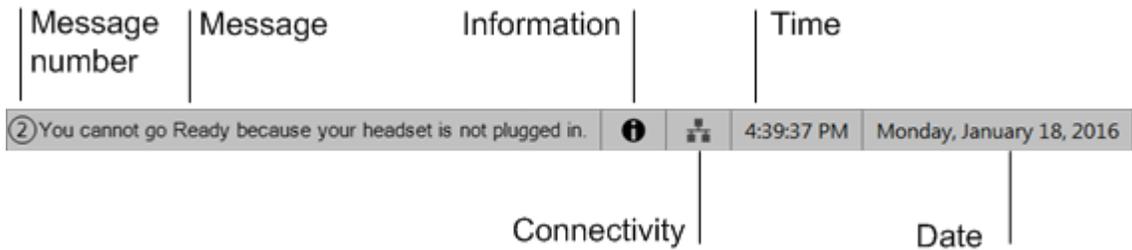


Console information can be available in a layout in the following ways:

- ◆ An open window.
- ◆ On a toolbar, as a button that opens the window.



- ◆ The **Information** button can be added the console status bar. This button displays the **Information** panel.
- ◆ As a shortcut that opens the window.



Windows that are opened from a toolbar button can be resized and moved, but cannot be docked to other windows or containers.

The Information window and the **Information** panel provide the following information.

Item	Description
Agency Name	The name of the agency the user is logged on to.
Agent Name	The display name of the telecommunicator who is logged on to the console. Assigned through DDS Configurator
Agent Extension	The extension assigned to the telecommunicator's role selected at log on. If no extension is assigned, then it displays the extension assigned to the console. Assigned through DDS Configurator.
Agent Role	The name of the role selected at log on.
Agent Information	Important relevant information about the telecommunicator. Assigned through DDS Configurator.
Console Name	Name assigned to the current console. Assigned through DDS Configurator.
Console Extension	The extension assigned to the console. If an extension is assigned to a call taker's role, then the column displays "Not registered". Assigned through the Console Configuration Utility.
Console Group	Name of the phone group to which the console is assigned. Assigned through DDS Configurator.
Console Index	The console identifier.
Layout	The name of the active layout.
Services	List of ASN services: Text , RTS (real-time statistics), or both.

Message area on status bar

The **Message** area displays console messages, either resulting from a telecommunicator action or a system condition. For example, a message is presented in the **Message** area if an action is not allowed by conference call rules.

The area has the following components:

- ◆ **Message** — displays the oldest message in a message queue, followed by the second oldest, and so on. Clicking the message area on the status bar opens a panel. If the

message is longer than the space available in the area, the text is truncated with an ellipsis.

- ◆ Message panel — displays the message and the time at which it was received for the current day.
- ◆ Number of messages — displays the total number of messages in the queue to a maximum of nine. If there are nine messages in the queue and a tenth message arrives, the oldest message is discarded. No number is displayed when there are no messages in the queue. Clicking the message number deletes the displayed message and displays the next message in the queue.



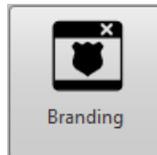
Customer branding

You can customize the customer branding window to display text on the title bar of the window and a graphic in the window. The window can be customized by using the **Preferences** dialog box.



The customer branding window can be available in a layout in the following ways:

- ◆ An open window.
- ◆ On a toolbar, as a button that opens the window.



- ◆ As a shortcut that opens the window.

Notification of log messages

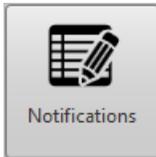
The **Notifications** window displays log messages that are received from the system and the console interface. The window can be customized by using the **Preferences** dialog box.

Notifications		
Level	Code	Description
INFO	ProductActivationKeyState	The product activation key is operational.
INFO	ProductActivationKeyState	Product activation key inserted - Connected

Clear List Delete

The **Notifications** window can be available in a layout in the following ways:

- ◆ An open window.
- ◆ On a toolbar, as a button that opens the window.



- ◆ As a shortcut that opens the window.

Windows that are opened from a button can be resized and moved, but cannot be docked to other windows or containers.

The Notifications window can contain the assets that are listed in the following table.

Asset	Description
Level column	The type of notification: Info, Error, and so on.
Code column	The code level.
Description column	A description of the notification.
Time column	The time the situation occurred.
Delete button	Deletes a selected notification from the window.
Clear List button	Deletes all notifications from the window.
Delete menu item	Deletes a selected notification from the window.

Switch

Administrators can configure the system with a **Switch** button that can be set up to operate an external device, such as an electronic door or lighting. The button can show an on and off state. A [SAM](#) is required for connecting the relay and deploying the button.



Related Links

[Sound Arbitration Module](#) on page 132

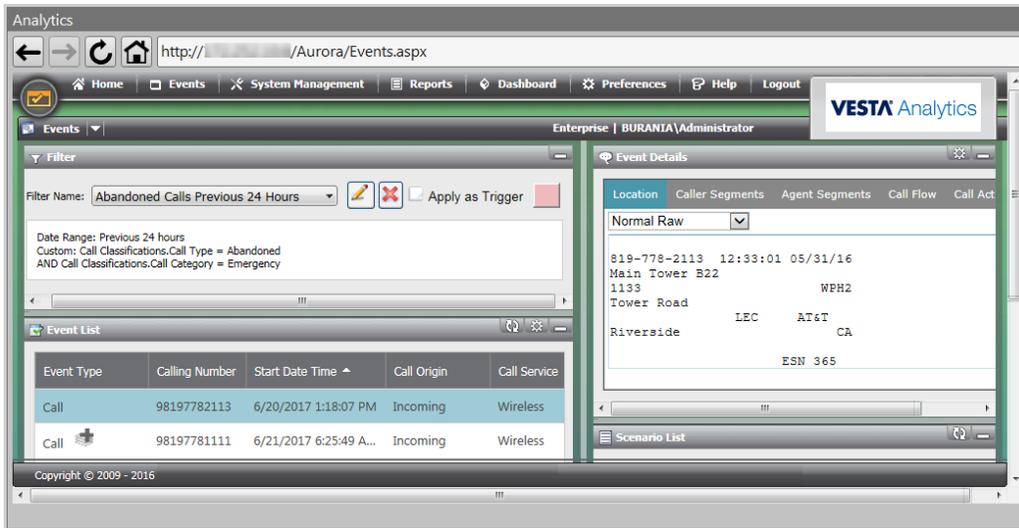
Web browsing

Based on Internet Explorer 11, the Web Browser window lets you display a console Web page. A home Web page is displayed in a window when it is first launched. Your access to Web sites can be restricted to those that are accessible within your system: for example, VESTA Map and VESTA Analytics. A window can be created by using the **Preferences** dialog box.

In the following example of a console layout, the Web Browser window is docked in the layout.

The screenshot shows the VESTA 9-1-1 console interface. The top toolbar includes buttons for Ready, Answer, Local Hold, System Hold, Conference, No Hold Conference, Blind Transfer, Transfer, Release, Drop Last, Drop All, Priority Assessment, Emergency Callback, and Redial. The left pane shows 'Personal' with a grid of call buttons (e.g., 2180-1, 2180-2) and 'Recent Calls' with a table of call records. The central pane is a web browser displaying 'Aurora/Events.aspx' with a filter for 'Abandoned Calls Previous 24 Hours' and a table of event details. The bottom pane shows 'Agents' with a table of agent status.

Agent	Console	Role	Info	State	ACD	Connected To	Type	Number	Call State	Call Duration	Reason
Agent 1	911 Main 1	911 Call Taker	Training	Connected	Not Ready	Agent 2					Active In Cal
Agent 2	911 Main 2	911 Call Taker	Spanish	Idle	Ready						
Agent 3	Fire Pos 1	Fire Dispatch		Idle	Ready						
Agent 4	Fire Pos 2	Fire Command		Idle	Not Ready						Away
Agent 5	EMS Pos 1	EMS Dispatch		Connected	Not Ready	Emergency 1					Active In Cal



The console supports multiple Web Browser windows that provide limited browser capabilities. Each window can display the content of one Web page. The window supports neither multiple tabs nor pop-up windows. The Web page that is displayed in a window cannot be formatted. You can copy the [URI](#), but you cannot modify it.

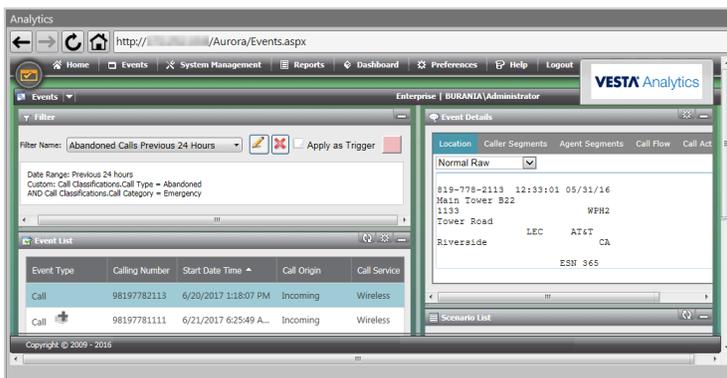
Web Browser windows can be available in a layout in the following ways:

- ◆ Windows can be open in the layout, either docked or undocked.
- ◆ For each browser window, on a toolbar, as a button that opens the window. The name of the toolbar button is configured in administrator preferences.



- ◆ As a shortcut that opens the window.

The following example shows the undocked Web Browser window opened by clicking the toolbar button.



Windows that are opened from a toolbar button can be resized and moved, but cannot be docked.

A Web Browser window contains the assets that are listed in the following table.

Asset		Description
Home button		Navigates to the configured home page in the browser window.
Back button		Navigates to the previously displayed page, if available, in the window.
Forward button		Navigates to the next page in the window if one had previously been displayed.
Refresh button		Reloads the page from the source, meaning that it retrieves it from the current URI and not from the cache.
URI box		Displays the URI for the page that is displayed. The URI can be copied but it cannot be edited in the window.

Web Browser windows can be created and customized from the **Web Browsers** panel of the **Preferences** dialog box, which contains the following elements:

Preference	Description
New button	<p>Displays the New Web Browser dialog box, which lets you create a web browser window and provide a title and a URI for the home page.</p> <p>The dialog box contains the following elements:</p> <ul style="list-style-type: none"> ◆ Title box — The name displayed on the button and window for that browser. The name can contain a maximum of 20 characters with the exception of the underscore (_). ◆ Home URI box — The URI of the home page that is displayed for that browser: for example, <code>http://www.motorolasolutions.com/</code>.
Edit button	<p>Displays the Edit Web Browser dialog box, which lets you edit the title and the home URI of the selected browser. This button is only enabled when a web browser is selected.</p> <p>The dialog box contains the following elements:</p> <ul style="list-style-type: none"> ◆ Title box — The name displayed on the button and window for that browser. The name can contain a maximum of 20 alphanumeric characters. ◆ Home URI box — The URI of the home page that is displayed for that browser, for example, <code>http://www.motorolasolutions.com/</code>.
Delete button	<p>Displays the Delete web browser dialog box that lets you delete the selected browser. This button is only enabled when a web browser is selected.</p>
List of web browsers section	<p>Displays the list of browsers available for a layout. Each item contains the browser title on the first line and the home URI on the second line.</p>

Call information transfer

The Call Information Transfer feature sends ALI call information for voice calls to a data device associated with a contact that is dialed from the console. The feature provides data transfer from voice-and-data and data-only contacts.

A telecommunicator can transfer any ALI (including original ALI, ALI update, manual ALI, and ALI selected from the **Call Information List**) for a voice call that is displayed in the **Call Information Display** window for a call that they received.

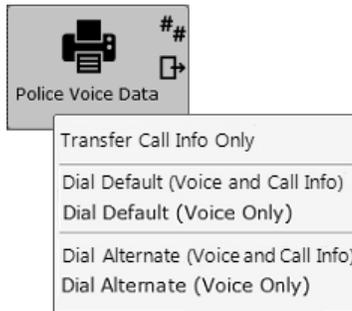
For each available phone number, a voice-and-data contact can provide the following options:

- ◆ **Transfer Call Info Only** — The ALI that is displayed in the **Call Information Display** window is transferred. The telecommunicator cannot verbally communicate with the contact.
- ◆ **Voice and Call Info** — The ALI that is displayed in the **Call Information Display** window is transferred and the telecommunicator can verbally communicate with the contact.
- ◆ **Voice Only** — The telecommunicator can verbally communicate with the contact. The ALI is not transferred.

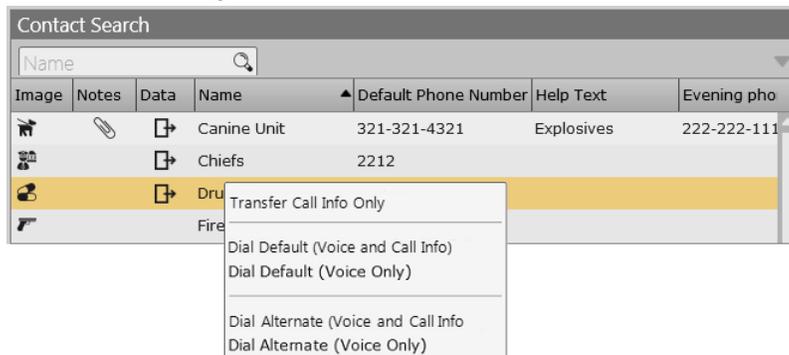
If a data transfer fails, a message is displayed in the **Notifications** window and the console status bar. If the voice portion of a call fails, an error message is displayed in the **Dialing Status** window.

Data transfer options are indicated as follows for data-only and data-and-voice contacts:

- ◆ **Dial Directory** — Displays the data transfer options on the right-click menu for a contact. The **Data** icon on a contact indicates that data can be transferred.

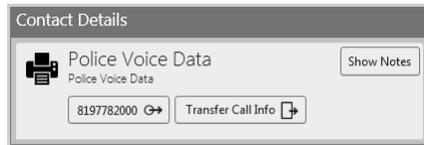


- ◆ **Contact Search** window — Contacts display the data transfer options on the right-click menu for a contact. If the window contains the **Data** column, and the column displays the **Data** icon for a contact, data can be transferred. The **Data** column can be added to the window from the **Contact Search** panel of the **Preferences** dialog box.



- ◆ **Contact Details** window — The window displays the **Transfer Call Info** button.

The **Contact Details** window does not support concurrent voice and data transfer.



Data transfer is supported for the following lines and call types:

- ◆ Emergency calls on 9-1-1 trunks
- ◆ Emergency lines
- ◆ On admin lines, saved call or transferred call information is supported
- ◆ Calls originating from ESInet
- ◆ Abandoned calls, answered on the ICA
- ◆ Abandoned callbacks

Data can be transferred to the following types of devices:

- ◆ Printer
- ◆ Terminal
- ◆ Workstation running terminal emulation software

The following table displays the transfer options that are available for data-only and voice-and-data contacts.

Contact configuration	Type of transfer	Asset
Voice and data	Voice-and data, single-click	<ul style="list-style-type: none"> ◆ Dial Directory ◆ Contact shortcut if available
	Voice-and data, right-click menu	<ul style="list-style-type: none"> ◆ Dial Directory ◆ Contact Search window
Voice only	Voice only	<ul style="list-style-type: none"> ◆ Dial Directory ◆ Contact Search window
		<p>Right-click menu option for both assets: Voice Only</p> <ul style="list-style-type: none"> ◆ Contact Details window
Data only	Data only	<ul style="list-style-type: none"> ◆ Dial Directory ◆ Contact Search window
		<p>Right-click menu option for both assets: Data Only</p> <ul style="list-style-type: none"> ◆ Contact Details window
Data	Data only	<ul style="list-style-type: none"> ◆ Dial Directory ◆ Contact Search window ◆ Contact shortcut if available

Page intentionally left blank

List of topics

- ◆ System configurations overview
- ◆ Centralized configuration
- ◆ Call flow basics
- ◆ Telephony configurations
- ◆ Direct PSAP Interconnect
- ◆ Call Filter Service
- ◆ Call data processing configurations
- ◆ Alarm panel
- ◆ Audio alerter
- ◆ ESInet configurations
- ◆ System utilities

System configurations overview

Underlying the call taking operations of the emergency call center are telephony and call data processing tools that enable technicians to set up the system and administrators to operate and maintain it.

Urgent calls arriving at a call center are sent to telecommunicators for prompt handling and dispatching of emergency services. The information from these calls can be distributed to first responders and used to dispatch them to the site of the emergency. Additionally, operational data can be collected and turned into valuable management information to make the call center more responsive. The following back-end telephony and call data processing services help the product deliver efficient emergency response:

- ◆ **Media Distribution Service (MDS)**—Provides telephony services, such as the interfaces between the public telephone system and the system as well as **ACD** of both emergency and administrative calls
- ◆ **Data Distribution Service (DDS)**—Provides call data service, such as extracting location information from the calling number and sending information to reporting tools and emergency response facilities
- ◆ **VESTA® ConfigPoint**—Provides a configuration interface to administrators for setting up **NG9-1-1**-based text-based calls.

Centralized configuration

Centralized configuration lets a **PSAP** centrally store, manage, and distribute console layouts, greeting files, and volume settings from the **CCDB**. The CCDB uses Apache CouchDB, which is an open source database that runs as a service on both DDS servers. The CCDB also stores the contact lists.

All layouts that are assigned to a role are available to all telecommunicators who sign in at an agency with this role. Layouts can only be modified by users with **Reconfigure Layout** permission, which can be set in DDS Configurator. Changes made to a layout are available to all consoles. The greetings that a telecommunicator records are available only to the telecommunicator who creates them. This is also true for personalized volume settings.

Volume settings and greeting files are associated with a telecommunicator independent of their console position, enabling a telecommunicator to access their personalized volume settings and greeting files from any console to which they log on.

Layouts

The configuration of the console is controlled by a layout. Console properties (for example, the console color, existing and new themes that the layouts reference) and asset configurations (for example, the size of buttons on a toolbar) are stored as part of the layout in the CCDB.

Greeting files

A telecommunicator can use the **Greetings Manager**, which is available from the console, to record emergency and administrative greetings and save them to the CCDB. A user with **System Configuration** permissions must give a telecommunicator permissions in DDS Configurator to play back the recorded greeting for administrative calls, for emergency calls, or for both.

Volume settings

A telecommunicator can set and save their own volume settings by using the **Master Volume** window accessible from the console. Volume settings are saved to the CCDB upon console logout. The volume settings are available from all consoles to which the telecommunicator logs on.

Event notifications

Event notifications are stored centrally by agency. When the telecommunicator logs in, the event notifications are activated by agent role.

Contact lists

All contact lists are stored on the CCDB and all consoles share the same contact lists. However, a single contact list is assigned to a given layout. Contact lists can be accessed and modified by using the **Contact Manager**, which is available from the console. **Reconfigure Layout** permission, defined in DDS Configurator, is required to access the **Contact Manager**.

Related Links

[Console layouts](#) on page 42

[Greetings Manager](#) on page 136

[Master Volume window](#) on page 133

[DDS Configurator](#) on page 170

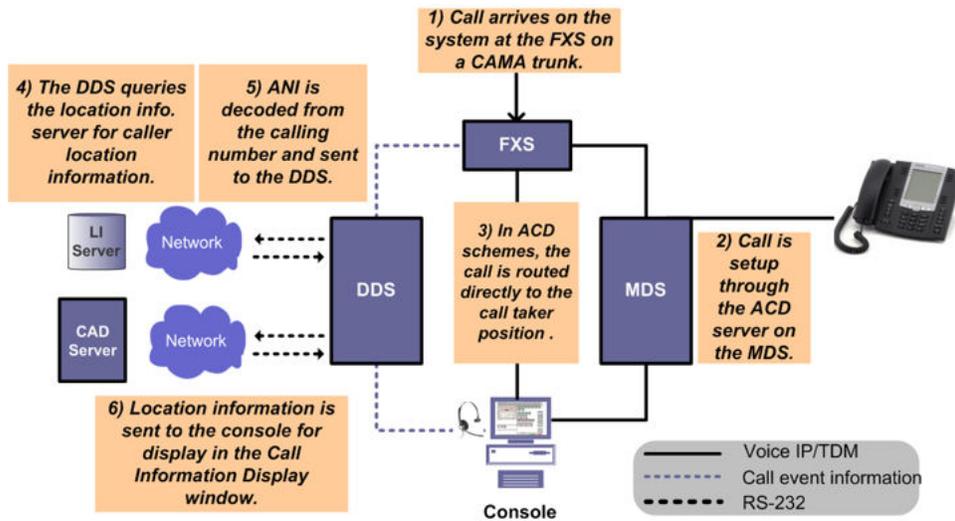
Call flow basics

You can understand better how MDS and the DDS system configurators work by seeing their functions in the context of how an emergency voice call is handled on the system.

9-1-1 voice calls arrive on the **FXS** gateway, where the call is converted to VoIP. Using **SIP** signaling, the FXS notifies the Media Distribution Service (MDS) of the incoming call. The Media Distribution Service (MDS) can assign the emergency voice call to a telecommunicator (agent ID) based on the selected **ACD** scheme and sends the call using the **Real-time Transport Protocol (RTP)** protocol to the console.

The FXS decodes the phone number of the caller from the incoming Multi-Frequency (MF) signals. This **ANI** is used by the DDS to query the location information of the caller. The location information is sent to the console for display in the Call Information Display window and then from the console to the **CAD** server, which provides the telecommunicator with the real-time status of emergency services.

The figure below illustrates a basic emergency voice call handling process using the current legacy emergency response system.



Calls can also be routed to a telecommunicator on priority queues, which are represented on the console by **MCA**s. A telecommunicator can request the call from the queue by clicking either the **Multi Calls** button which identifies the longest-ringing number on the highest-priority queue or the MCA itself.

An alternative call flow can involved processing calls that have been accidentally dialed (that is, pocket dial calls) through the CFS.

Related Links

- [Component types](#) on page 23
- [Pocket Dial Filter](#) on page 166

Telephony configurations

Configuring the telephony components in the system involves the telephony interfaces and MDS Configurator. They deliver administrative and emergency calls to the system. How they deliver the calls to the telecommunicators depends on the call distribution configurations.

Related Links

- [Telephony interfaces](#) on page 158
- [Product components](#) on page 210
- [Component types](#) on page 23

Telephony interfaces

The following table lists and describes the basic telephony **CPE** components in the system.

Telephony component	Description
Voice media gateway	<p>Provide connections to the public telephone system and support SIP signaling:</p> <ul style="list-style-type: none"> ◆ Mediant 3000 or 2000 gateway connects digital lines to VoIP network: for example, T1 (TDM) trunks; supports ISDN PRI and CAS type (loop start, ground start, E&M, CAMA trunk) signaling; enables Direct Inward Dialing (DID) services for configuring destination phones for multiple lines ◆ Mediant 1000 or Mediant 1000 Chassis B (1000B) gateway modular design provides support for two Ethernet ports; supports Analog FXS and FXO with ground start signaling, FXS (CAMA, ringdown), ECS-1000 selective router on analog FXS ports, digital T1 interfaces
FXS	<ul style="list-style-type: none"> ◆ Connects to external networks, such as PSTN, LANS, and WANS, and also converts analog emergency CAMA trunks to VoIP ◆ Provides connections to ringdowns: for example, emergency responders, such as police, fire, and ambulance
FXO	<ul style="list-style-type: none"> ◆ Connects to PSTN, LANS, and WANS ◆ Converts analog loop start lines/POTS to VoIP

Related Links

[Telephony configurations](#) on page 158

[Product components](#) on page 210

MDS Configurator

Media Distribution Service (MDS) is a [SIP](#)-based software [PBX](#) that delivers telephony services, such as voice mail, [ACD](#), and auto attendants to the call center. MDS implements routing and control protocols that work with a variety of media gateways, phones, and media servers.

MDS CONFIGURATOR Home Logout Help

User Settings

- Users
- User Groups

Endpoints

- Phones
- Phone Groups

Network Services

- Gateways

Administration

- ACD Servers
- User Extension Pool
- Dial Plans
- Auto Attendants
- Call Park
- Configuration
- Backup

Diagnostics

- Registrations
- Job Status
- Services

Phones Add Phone

Group: all -

Phone	Lines	Model	Description
<input type="checkbox"/> 00085d2f6aea	2322	Aastra 6757i	Aastra phone
<input type="checkbox"/> 00085d2f629e	2321	Aastra 6757i	Aastra phone
<input type="checkbox"/> 00085d272224	2218	Aastra 6757i	

<< 1 >>

Send Profiles Send All Profiles Restart Delete

Restart only works when phones can successfully register; otherwise you need to restart phones manually.

With the configurator, administrators can perform tasks, such as:

- ◆ Adding users on the system

- ◆ Grouping users with call handling permissions: for example, long-distance dialing, voice mail inbox, telecommunicator recorded greetings
- ◆ Defining digital gateways (Mediant 3000, Mediant 2000, Mediant 1000, and Mediant 1000 Chassis B) and analog gateways (FXS, FXO)
- ◆ Configuring phones
- ◆ Defining console extensions
- ◆ Configuring voice mail through expiration parameters, extension digits, SMTP server, email notification
- ◆ Setting up the Auto Attendant, an automated answering service for incoming calls.
- ◆ Configuring remote voice mail retrieval, a default auto-attendant that is accessible by dialing 2100. The default auto-attendant extension can be changed to accommodate the internal dialing plan of a site.

Automatic Call Distribution features

Emergency calls are sent to answering positions based on a pre-set call routing scheme. ACD defines the specific order and criteria by which calls are routed to telecommunicators. ACD can also manage the flow of calls by distributing them to different queues, such as queues for administrative and emergency calls.

The following table lists and describes the ACD features available on the system. These features offer different ways of presenting calls to telecommunicators, managing the call queues, and answering calls from the ACD.

Feature	Description
Console-based routing	Routes calls to consoles independent of the telecommunicator logged on.
Agent-based routing	Routes calls to logged-in telecommunicators independent of the console.
Routing schemes	<p>ACD call routing schemes provide options for distributing call-taking staff:</p> <ul style="list-style-type: none"> ◆ Ringall directs the call to all available telecommunicators in the group. ◆ Circular directs the call to the next available telecommunicator in round robin fashion within the group. ◆ Linear directs the call to the to the first available telecommunicator within the group with the highest priority setting. ◆ Longest Idle presents the call to the longest idle telecommunicator in the group.
Queue overflow	<p>ACD overflow can be triggered when the:</p> <ul style="list-style-type: none"> ◆ Last agent logs out of the system when a call is in the queue. ◆ Maximum Queue Depth is reached. ◆ Maximum Wait Time for a call is reached.
IP phones in ACD	IP phones on the system can log on and off from the ACD queue

Feature	Description
Transfer and conference to ACD Queue	A call can be transferred to any ACD queue. A call can be conferenced with a telecommunicator who can be reached by dialing an ACD queue number.
Re-queue a failed call	If a call is dropped from a console because of a console or network failure, the system will automatically requeue the call to the appropriate ACD queue or MCA .
Audio options for ACD queue	Two announcements are provided: <ul style="list-style-type: none"> ◆ The Welcome Audio is played to callers when their call is first received by the ACD queue, before the call is presented to a member agent. ◆ The Queue Audio is played while a call is in the ACD queue waiting to be presented to an available agent. The Queue Audio file is replayed at a pre-configured interval until the call is answered.

**Note**

Consoles can be configured to present abandoned calls to the [ICA](#) in addition to ACD calls. Abandoned calls can have priority over ACD calls, appear on the console alternatively with ACD calls, or appear only when there are no ACD calls waiting.

Related Links

[ACD Readiness](#) on page 91

Agent-based call routing

Agent-based call routing lets a telecommunicator log on to a console with their user name. Calls can be routed to the agent identifier (ID) associated with a telecommunicator independent of the console at which he or she sits.

Auto Attendant

The VESTA 9-1-1 Auto Attendant feature provides callers with options to direct their calls within the telephony system without the intervention of call center staff. Audio prompts and message feedback enable callers to choose how they want their calls to be handled.

**Note**

The VESTA 9-1-1 auto attendant uses RFC 2833 for Auto Attendant DTMF.

You can configure auto attendant entries to meet the requirements of an agency. Administrators can customize caller navigation and voice messages in an auto attendant to allow callers the choice of the following:

- ◆ Two or more available languages used in the voice prompts by the auto attendant. Users can select a specified key associated with a language of their choice.
- ◆ The type of call they are making regardless of the line they have called on: that is, administrative or emergency. For example, a caller who has dialed on an administrative line can identify their call as an emergency. The auto attendant then routes the call to a specified emergency [ACD](#) call queue.

Administrators can configure a VESTA 9-1-1 auto attendant with the following options:

- ◆ A maximum of 12 caller choices for each decision level: for example, Press 1 to route to an extension, Press 2 to speak to an operator, Press 3 to leave a message, and so on.
- ◆ User-recorded WAV files for the voice prompts
- ◆ Number of repeated voice prompts
- ◆ Timeout actions, such as routing to an extension or the disconnection of the call

A VESTA 9-1-1 system can have

- ◆ 150 Auto Attendants configured on the system
- ◆ 50 simultaneous Auto Attendant calls
- ◆ 50 Auto Attendant Groups

Abandoned calls arriving on an administrative call auto attendant are handled in the following ways:

- ◆ A dropped call on a call queue is not generated as an abandoned call on the VESTA 9-1-1 system
- ◆ A dropped call that has been routed to an emergency call queue is generated as an abandoned call and is presented to the VESTA 9-1-1 console as such.

Auto Answer

The Auto Answer feature accepts and answers administrative and/or emergency calls on the console without any action required by a VESTA 9-1-1 user. The telecommunicator receives the live call from [ACD](#) without clicking **Answer**. Auto Answer does not send calls to a telecommunicator who is on an active call. The telecommunicator, instead, hears a beeping signal through the headset, followed by a configurable delay before the call. The default delay is five seconds.

The Auto Answer feature also works with Automatic Abandoned Call Distribution, in which consoles can be configured to receive and automatically answer notifications of abandoned calls on the In Calls Appearance.

The Auto Answer feature contains an **Headset detection for console ACD ready state** option. When this option is enabled, the console immediately enters a not ready state for ACD calls when the telecommunicator unplugs the headset from the jackbox. After the call taker plugs the headset into the jackbox, the **Ready** button must be clicked to enable the telecommunicator to receive ACD calls again.

Transfer to Queue

The system can be configured for telecommunicators to transfer and conference calls on an [ACD](#) queue.

A telecommunicator can transfer the call to a queue as if she were transferring or conferencing any other call. Instead of dialing another party, the telecommunicator dials a [queue directory number \(QDN\)](#), a type of [VDN](#). After the call has been transferred to the ACD, it is distributed to telecommunicators according to the routing scheme of the queue. A telecommunicator who is mapped to the queue can answer the transferred call or conference on the call with the other participants.

Related Links

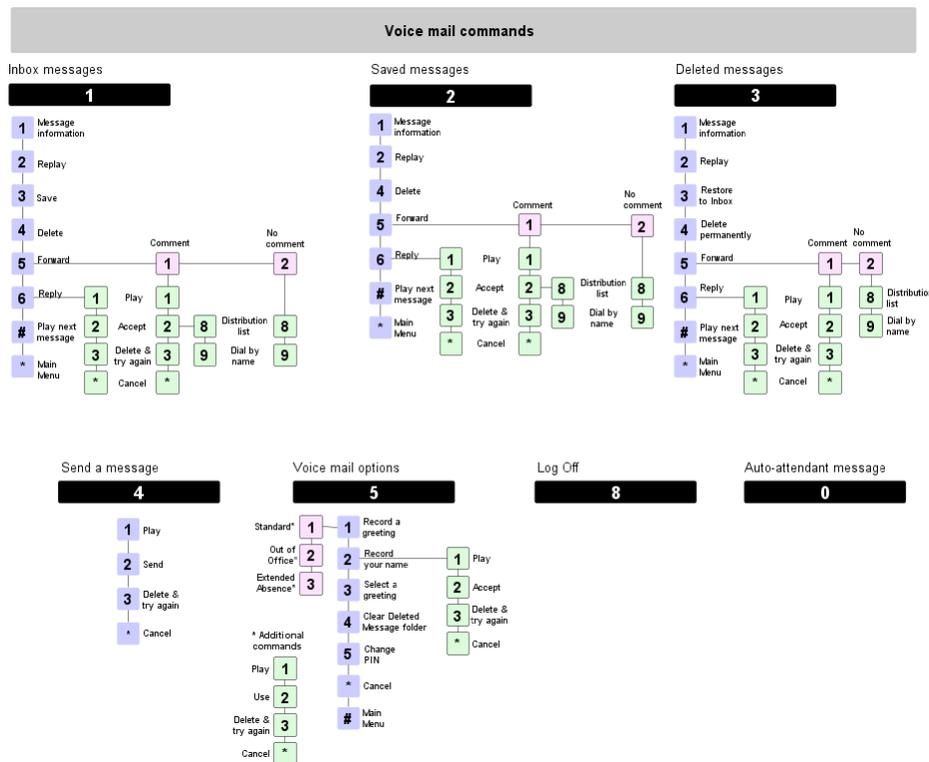
[Transfer](#) on page 84

IP phone voice mail

A voice mail system is available through the IP phone. A telecommunicator can perform the following common voice mail tasks using the phone keypad:

- ◆ Use the Inbox to retrieve, replay, reply to, and delete messages, view message information, comment on messages
- ◆ Retain, reply, and delete saved messages
- ◆ Restore deleted messages and delete them permanently
- ◆ Record, erase, and replace voice greetings
- ◆ Set an auto-attendant to get all calls

The following figure shows the voice mails options by Inbox messages, Saved messages, Deleted messages, Send a message, general Voice Mail options, Log Off, and Auto-attendant message.



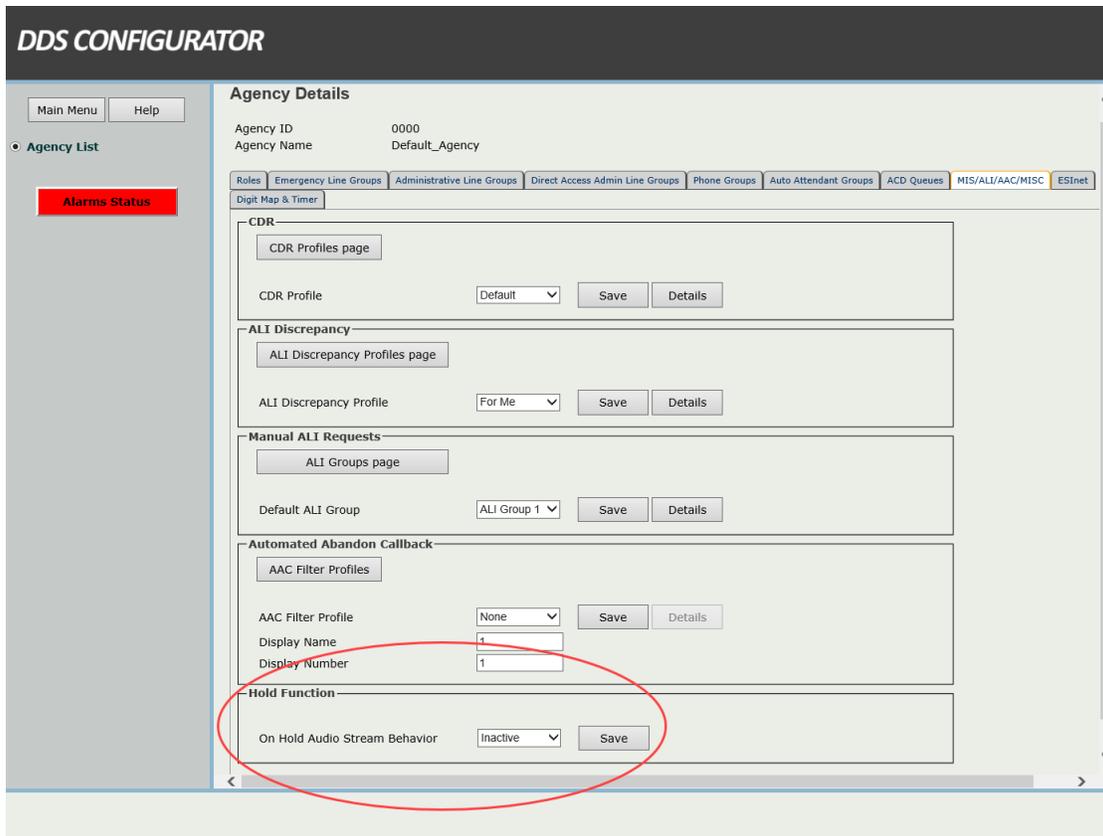
On-hold RTP

By default, after a telecommunicator puts a caller on hold, the media gateway sends periodic tones to the caller to confirm that the connection is still active.

Administrators can choose to play a periodic tone over a RTP stream instead of using the tones generated by a gateway. Alternatively, administrators can choose to play an on-hold voice message by RTP instead of a tone. These settings are made on a per agency basis.

The tones and message can be played to another VESTA 9-1-1 console and one or more conference participants that are put on hold.

On the **Agency Details** page of the **DDS Configurator**, three options are available for configuring on-hold tones in the **Hold Function** area of the **MIS/ALI/AAC/MISC** tab:



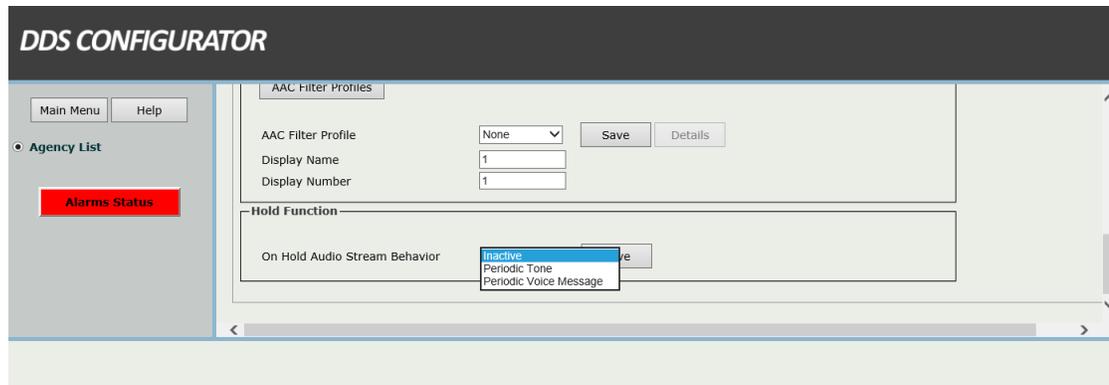
The On Hold Audio Stream Behavior options are:

- ◆ **Inactive**—A periodic tone that is generated by a media gateway is played to the caller on hold.
- ◆ **Periodic Tone**—A periodic tone is recorded in a WAV file transmitted over RTP that is played to the caller on hold.
- ◆ **Periodic Voice Message**—A periodic voice message is the form of a WAV file transmitted over RTP is played to the caller on hold: for example, "Please hold...."



Note

For agencies that receive **ESnet** calls, the **Periodic Tone** or **Periodic Voice Message** options are recommended.

**Caution**

The **Periodic Tone** and **Periodic Voice Message** options only apply to consoles. IP phones support the **Inactive** setting only. When a call is put on hold at an IP phone, RTP audio is stopped. As a result, if an **ESInet** call from an AT&T network is put on hold at an IP phone, the call is rerouted in the absence of RTP media.

A console put on hold generates its own on-hold message.

Direct PSAP Interconnect

A telecommunicator can transfer and conference voice calls with another VESTA 9-1-1 **PSAP** that resides on a different domain over the same **IP** network. The **ANI** of the original caller is delivered with the call to the target VESTA 9-1-1 system. The console on the target system can initiate an **ALI** request using the ANI of the original caller. All **PSAPs** participating on **Direct PSAP Interconnect (DPI)** calls must operate on, at the minimum, VESTA 9-1-1 Release 7.1 systems.

**Note**

The **ALI** query can be unsuccessful: for example, the **ALI** provider of the **PSAP** on which the call originated is not the same as the target **PSAP** in a **DPI**.

The supported call types are:

- ◆ Emergency calls originating on a **CAMA trunk**
- ◆ Administrative calls
- ◆ Emergency Calls from the **ESInet**

A telecommunicator can also place a call to a **PSAP** on another VESTA 9-1-1 system by using this feature.

On systems that are configured to communicate with other **PSAPs** over a private **IP** network, the following call handling actions are possible from the **PCA** of a console:

- ◆ complete a basic call from one **PSAP** to another
- ◆ initiate a call transfer to another system
- ◆ initiate a blind transfer to another system
- ◆ initiate a no-hold conference with another system
- ◆ initiate a hold conference with another system

On **DPI** conference calls, only one party is the controller on a given call. The controller is the sole party who can perform call handling tasks (such as conferencing and transferring calls)

with other networked PSAPs. As the recipient of a transfer from inside or outside the local PSAP, a telecommunicator assumes control of a call and all call handling features.



Non-controller participants on a conference call can add other participants from their own local PSAP and transfer the call locally within their PSAP.

Note

To make a call, transfer a call, or conference other call taking systems, the telecommunicator dials a number configured to reach the target call taking system through a dial plan. All existing dialing features are available to a telecommunicator.

Call types persist across systems. For example, an emergency call that is transferred to another VESTA 9-1-1 call center appears on the receiving console as an emergency call.

ESInet calls are supported in DPI. However, telecommunicators who receive a ESInet call from another VESTA 9-1-1 system over an IP network cannot invoke a **Network Conference** or a **Network Drop Last** action.

Call Filter Service

The Call Filter Service hosts the Pocket Dial Filter feature and the Automated Abandoned Callback feature on redundant servers. If one or both of the CFS servers fails, calls are routed directly to an ACD queue. The CFS also contains the voice prompts that are played to callers.



The CFS can operate on a minimum of one server on redundant VMs. With a single CFS installation, it is recommended that the CFS is installed on the A-side.

Note

Pocket Dial Filter

False emergency calls can be accidentally dialed when the emergency option of a mobile phone is unintentionally activated, often from pressure in a pocket or the tumbling of a phone in a purse. These calls are widely known as *pocket dial calls*.

To distinguish genuine emergency calls from accidentally-dialed pocket dial calls on an ACD queue, the VESTA 9-1-1 Pocket Dial Filter requires phone users to respond to a voice prompt either by pressing a key or speaking. Depending on the response, the call is routed to an ACD queue for answer as an incoming call by a telecommunicator or the call is disconnected. The PDF is configured on an emergency line and can process TTY and voice calls.



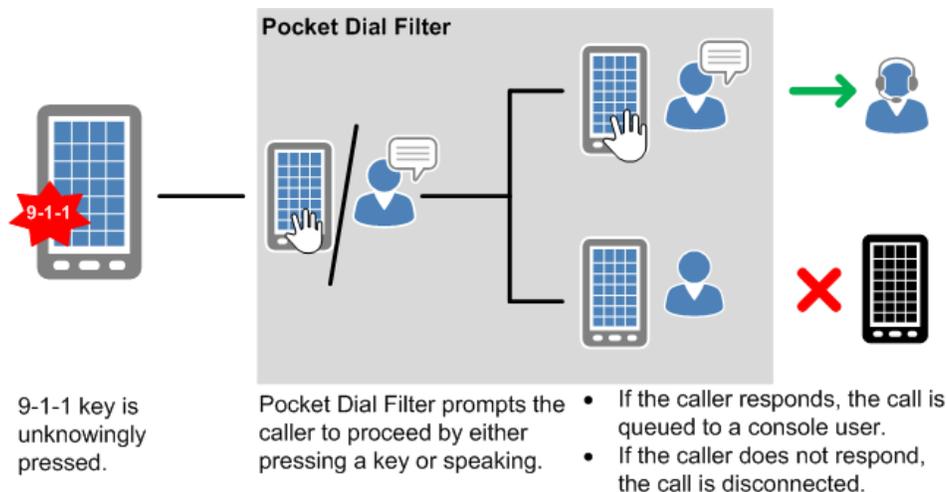
Pocket Dial Filter does not support American Standard Code for Information Interchange (ASCII)/TTY-Baudot encoding and decoding. The filter detects tones using the Voice Operated eXchange (VOX) detector. A voice prompt recording that includes a Baudot message is supplied with the feature.

Note

The PDF feature can detect caller responses by

- ◆ voice audio above a specified sensitivity
- ◆ pressing a dual-tone multi-frequency (DTMF) keypad button
- ◆ Baudot tones for TTY calls above a specified sensitivity

If the caller responses are not received, the call is disconnected.



Trial mode

Administrators can configure the Pocket Dial Filter in trial mode.

In trial mode, the Pocket Dial Filter identifies pocket dial calls without filtering them, so that all calls (including pocket dial calls) are routed to the console. The trial mode can be used to measure the impact of pocket dial calls on a system: for example, to estimate the number of expected pocket dial calls, to predict peak times, and so on. Trial mode is an important tool that lets administrators adjust the sensitivity of the filter without rejecting calls.

An optional transfer message is played to the caller before the call is routed to a console.



Warning

AUTOMATED PROCESSING OF 9-1-1 CALLS MAY RESULT IN AUTOMATED DISCONNECTION OF 9-1-1 CALLS DUE TO SYSTEM MALFUNCTION OR MISIDENTIFICATION OR A CALLER'S INABILITY TO SPEAK OR UNDERSTAND THE LANGUAGE USED IN AUTOMATED ANNOUNCEMENTS. THIS COULD RESULT IN LOST 9-1-1 CALLS.

Related Links

[Call flow basics](#) on page 157

Automated Abandoned Callback

The VESTA 9-1-1 system generates an abandoned call after the caller terminates a call that is

- ◆ ringing on a console
- ◆ waiting in a call queue
- ◆ passing through the Pocket Dial Filter (when the [CFS](#) is configured to do so)

The Automated Abandoned Callback feature enables a VESTA 9-1-1 system to automatically redial a valid number from an abandoned 9-1-1 call.

If the original 9-1-1 caller answers the call, a voice recording can prompt the caller either to proceed with the 9-1-1 call or to cancel the call.

If the original 9-1-1 caller chooses to proceed, the call is sent to an emergency [ACD](#) queue for handling by a call taker. A transfer .WAV audio file can be configured to play when the call is transferred. The call is queued for ACD with the last known ALI. After the call is answered, the ALI appears in the Call Information Display with the label **Abandoned**.

If the original 9-1-1 caller cancels the call or does not answer, by default, the call is disconnected and no further action is taken. A disconnect .WAV audio file can be configured to play when the call is released. Administrators can configure the filter to present the abandoned call to the console if the caller does not answer.



Note

The VESTA 9-1-1 system identifies a 9-1-1 call as abandoned when the call rings longer than a configured period. By default, the period is 0 to 30 seconds.

In either case, the caller chooses to proceed or cancel by pressing a phone key as instructed in the prompt.

Under some system conditions that prevent AAC filtering, new abandoned voice calls are presented to the consoles: for example, if both AAC filters are not accepting new abandoned calls, if the gateways used for callbacks become unavailable. Similarly, before a CFS is shut down, the call filtering process completes before the server stops operation.

In the case of a system split, duplicate abandoned calls can be generated. After the system rejoin, duplicate calls are eliminated, so that only authentic abandoned calls are displayed in the Abandoned Calls window.

The AAC can filter a call between one and ten times.

An AAC configuration is created as a filter profile that can be applied to an agency in DDS Configurator. A VESTA 9-1-1 system can have a maximum of 50 AAC filter profiles (one per agency).

Administrators must ensure that enough lines are provisioned on a system to accommodate AAC in addition to receiving and placing calls. A line that is used for an AAC remains in use until the call is finished. In other words, the line is in use even after the call leaves the AAC filter module and is transferred to queue.

Valid changes to the filter profile are applied immediately to an AAC filter profile take effect immediately, including on any new calls or callback attempts.

The Automated Abandoned Callback feature does not specifically detect TTY calls and handles the call as if it were a voice call.

The AAC Filter Profile is supplied, by default, with the AAC_TTY.wav file. This prompt file includes a Baudot signaling message and an invitation to use VCO (Voice Carry Over) to reply as an emergency call or not.

Queue Selector

Voice callers on an ACD queue can be presented with options to direct their administrative and emergency calls to another queue based on their selection. The Queue Selector plays a recorded prompt that offers call routing choices that are associated with ACD queues. The caller can select the queue of choice by pressing a digit on a phone keypad.

If there is no response detected from the caller, the call stays in the queue until a console user becomes available.

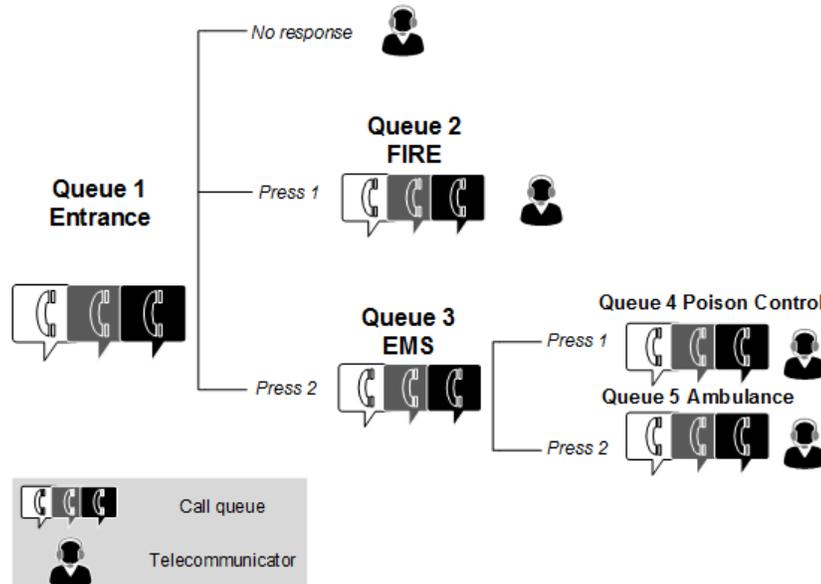
The following graphic illustrates an example of the Queue Selector operation on a VESTA 9-1-1 system. In this case, the call arrives at the PSAP on Entrance Queue 1. The Queue Selector is configured to offer the following choices to the caller:

- ◆ Press 1 on the keypad for Fire services.
- ◆ Press 2 on the keypad for emergency medical service (EMS)

The choice of Fire services sends the call to an ACD queue where it is answered by a telecommunicator.

The choice of EMS invites, for example, the caller to press **1** for poison control or to press **2** for an ambulance. Depending on the choice, the call is directed to the appropriate ACD queue.

If there is no response from the caller, the call remains on the queue until there is an available agent or the call is routed to the configured overflow queue.



Customizations

You can customize the Queue Selector in several ways:

- ◆ Voice prompt recordings. A welcome message can be configured for calls arriving for the Queue Selector.
- ◆ Keypad digits for choosing prompt options.
- ◆ Prompt repetitions. The repeat function replays the entire list of voice prompts. It is not possible to repeat a specific wave file in the list.
- ◆ Queue Selector activation when there is no available agent.
- ◆ Queue Selector time-out duration when there is no response from the caller.

Guidelines and limitations

The operation of the Queue Selector has the following implications for the VESTA 9-1-1 system:

- ◆ The Queue Selector can lengthen the time spent by the call in the VESTA 9-1-1 system before the call is answered, thereby affecting call statistics.
- ◆ During Queue Selector processing, a call can spend more time in a queued state on the VESTA 9-1-1 system. As a result, alerts and thresholds the Multiple Queue Display and the Heads-Up Display might need to take Queue Selector processing into account.
- ◆ The order of the calls is determined by how the calls progress through the Queue Selector (for example, repeating prompts) rather than the sequence by which the calls arrive on the VESTA 9-1-1 system.
- ◆ If a caller hangs up during processing of an emergency call in the Queue Selector, an abandoned call is generated.

The Queue Selector has the following limitations:

- ◆ The Queue Selector cannot be configured on a priority queue. However, callers can choose a option on the Queue Selector that routes their calls to a priority queue.
- ◆ The Queue Selector does not support voice recognition: for example, where the caller speaks the option. Queue Selector works with [DTMF](#) only.
- ◆ Except for the transfer message, you must supply your own voice prompts created through a third-party application. The maximum number of messages is 10 per profile to a total maximum of 106.
- ◆ The Queue Selector does not support [TTY](#) calls.



A WAV file containing Baudot tones can be played to callers using TTY.

Note

- ◆ The Queue Selector and the Pocket Dial Filter share the [CFS](#) 200 concurrent call limit per CFS (for a total system limit of 400 with two CFSs).

Call data processing configurations

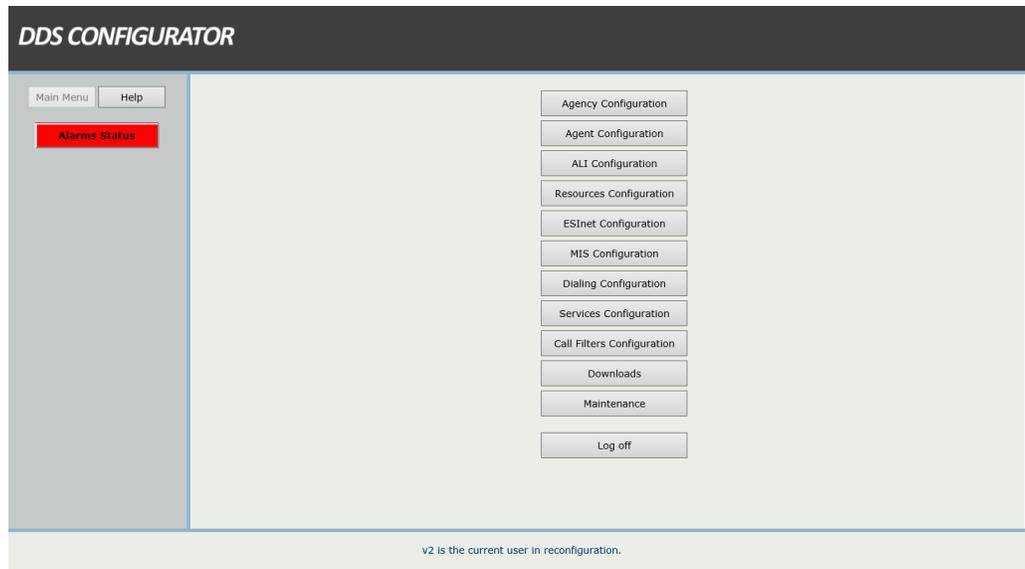
[DDS](#) provides data services in the system, among them location information services and [CAD](#) services. The telephone number of the caller is used to extract caller location information. The location of the caller is used to dispatch emergency services that are both timely and appropriate to the situation. Other data management activities on the DDS handle important call data functions, such as sending call data to management information systems, such as VESTA™ Analytics and [CDR](#) print, and enabling telecommunicators to detect and record discrepancies between the actual location information of the caller and the location information stored in a database.

Related Links

[DDS Configurator](#) on page 170

DDS Configurator

Data Distribution Service (DDS) Configurator, as shown below, enables users to adjust global settings and settings specific to services, components that interact with DDS Configurator, including location information services, and lets you add and manage VESTA 9-1-1 users.



The following components comprise DDS. A description of the main function of each component is provided.

Component	Description
Activity Manager	<p>Tracks all the activities and diagnostics of the DDS server by:</p> <ul style="list-style-type: none"> ◆ Posting event logs and diagnostic logs to the Windows Event Viewer application. ◆ Sending the real-time system information to the Activity View application via TCP/IP. ◆ Managing the local Alarm Panel. <p> The Alarm Panel is optional and is not available for a virtual machine deployment.</p> <p>Note</p>
ALI Manager	<p>Provides the following:</p> <ul style="list-style-type: none"> ◆ Location information for emergency and admin calls (manual request). ◆ CPN, ESN, and CoS (Class of Service) extraction features. ◆ Five-call history, if this is not provided by the location information provider.
CallP Manager	<p>Manages the data transactions associated with calls on the system by:</p> <ul style="list-style-type: none"> ◆ Sending system activity to the Event Writer. ◆ Receiving all local PBX activities from the console and all system wide activities from the Resource Manager. ◆ Providing call detail information—location information, ESN—to the console. ◆ Providing connections between most of the software modules for call processing.

Component	Description
Data Transfer Manager	<ul style="list-style-type: none"> ◆ Transfers any information given by the CallP Manager to the data ports (RS-232) — Each data port can be configured to be either a CAD port, a dedicated data port or a dial-out data port (Fax/Modem). ◆ Enables automatic location information requests to be sent out on CAD ports.
Event Writer	Creates and maintains statistical databases, CDRs, and location information discrepancy reports, and interfaces with VESTA Analytics.
Resource Manager	<ul style="list-style-type: none"> ◆ Enables administrators to manage the system database by retrieving logs and alarms from the MDS. ◆ Monitors activities on SIP-based system elements.

Location information configuration

The DDS uses the ANI of the incoming call to query a location information service provider database. The location information service provider returns the street address information and supplemental information associated with the ANI of the incoming call. The returned information is displayed to the telecommunicator in the **Call Information Display** window. A location information discrepancy tool is available to the telecommunicator in instances where the location displayed at the console is wrong.

Location information (ALI) is managed using **ALI Configuration** settings in DDS Configurator. The important location information management tasks include:

- ◆ How location data is displayed in the **Call Information Display** console window.
- ◆ What kinds of location information are displayed.
- ◆ How the system communicates with the location information service provider: for example, the required protocol, defined ports, and so on.
- ◆ Enabling the extraction of ESN for supporting services (fire, police, ambulance) from the incoming location information data stream and displaying it in the **Call Information Display** window.
- ◆ Enabling the extraction of the CPN of an emergency cellular caller and displaying it in the **Call Information Display** window.

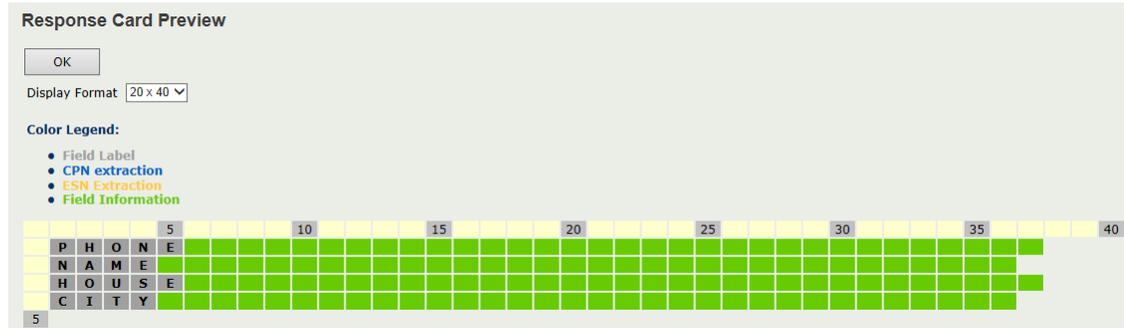
Location information from incoming calls is formatted for view in the **Call Information Display** window based on the Response Card, which can support either 20 rows by 40 columns of text or 10 rows by 80 columns of text. Administrators can create labels and define fields for in the **Response Card** page of DDS Configurator.

Response Card Configuration

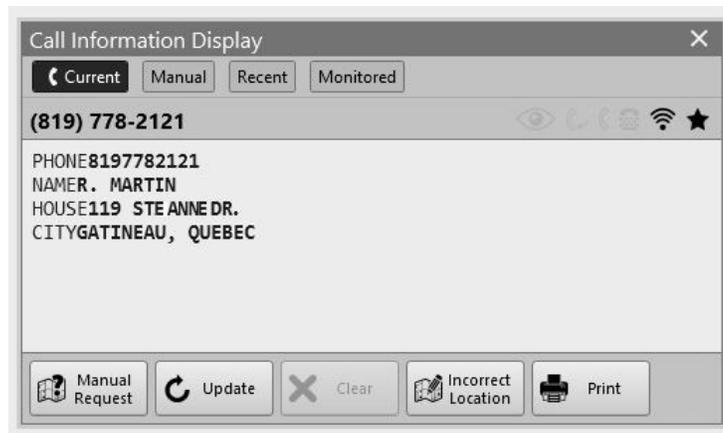
Save Preview Preview with values Update ALI Preview values

Field #	Field Label	Field Row	Field Column	Label Length	Information Length	
New Field	<input type="text"/>	Add				
1	PHONE	1	1	6	32	Delete
2	NAME	2	1	0	32	Delete
3	HOUSE	3	1	4	32	Delete
4	CITY	4	1	6	32	Delete

After configuration, administrators can preview the results of their configuration of the **Response Card**.



After saving the configuration to DDS Configurator, the **Call Information Display** window shows the caller information with the configured labels



Related Links

- [Call information](#) on page 64
- [Call Information Display window](#) on page 65

Resources configuration

Resources Configuration provides a series of configuration pages that identifies system resources to the DDS Configurator, such as:

- ◆ System resources and settings used for communications between the MDS server and the DDS server.
- ◆ Connections to [CAD](#) services and the protocol used by each service.
- ◆ Line types, such as an emergency trunk or line or an administrative line.
- ◆ Settings that provide the capability to transfer location information and other call related information over dedicated RS-232C communication links to secondary agents who do not have consoles.
- ◆ Administrative phones and console phone configurations.
- ◆ [ESN](#) configurations to identify the safety agencies within the emergency services zone nearest the emergency caller. Safety agencies include Police, Fire, and Ambulance. The ESN contact group members are displayed as lists at the consoles. Telecommunicators can initiate calls to contact group members by selecting an entry from the lists.
- ◆ Management Information System Configurations

- ◆ Setting up [SAM](#) profiles
- ◆ Configuring the Call Information Transfer report

Computer Aided Dispatch configuration

[CAD](#) provides a telecommunicator with real-time status of emergency response units, so that the telecommunicator can select the best response to a request for emergency help. A CAD Group identifies the ports on which the DDS sends location information to the CAD server. CAD groups are assigned on a per console basis.

The following CAD interfaces are supported:

- ◆ RS-232 CAD spill
- ◆ Remote CAD spill over TS-4 to transverse IP network
- ◆ Multiple CAD port group
- ◆ Multiple CAD protocols

The system also supports EMD/CAD client applications running on the console by [Transmission Control Protocol \(TCP\)/IP ALI](#) dump (for example, ProQA, Mobilair).

When a telecommunicator is on a [TTY](#) call that is using the [NENA](#) TTY protocol, the switch to a text call does not interrupt the transmission of call information to the [CAD](#) even though the current console call is now a text call.

Data transfer services

Data transfer ports are used to send location information and call information to secondary agencies. The transfer can be made manually or automatically.

Agencies

An agency is a call center that is responsible for answering and responding to emergency calls. Multiple agencies can act as tenants that inhabit and draw resources from a single system. System resources can be shared by agencies (for example, [ALI](#) and printers) and dedicated solely to a single agency (for example, [ACD](#) queues, lines and trunks).

This section is intended to

- ◆ Introduce you to the characteristics of an agency
- ◆ Describe the reasons why you would have more than one agency on a system
- ◆ Define the resources that are dedicated to an agency and the resources that can be shared with other agencies on the same system
- ◆ Provide a high-level overview of how agencies are created

What are the characteristics of an agency?

Agencies have the following characteristics:

- ◆ They are managed centrally through DDS Configurator and MDS Configurator.
- ◆ An agency can be created based on function (for example, police or medical) or location (for example, a suburb or a county). You might have an agency that takes calls for general information and another agency that takes calls for emergencies.
- ◆ A telecommunicator can log on to different agencies on the same system by using a role associated with a specific agency.

An unpartitioned system runs as a single agency using the Default Agency. Other agencies can be created, but all shared system resources start in the Default Agency. A system can have a maximum of 50 agencies.

Why create multiple agencies?

Agencies can be created for one or more of the following reasons:

- ◆ Agencies group related telecommunicators with related lines and trunks. These resources are separated from other groups of telecommunicators.
- ◆ Agencies partition CDR and ALI Discrepancy reports by agency. For example, reports from Agency A are created separately from Agency B although the reports are produced by the same printer.
- ◆ Agencies manage resources by dividing and sharing them between agencies.
- ◆ Agencies can make abandoned calls visible to specific groups of telecommunicators within the same agency.
- ◆ Multiple telecommunicators on the same system can be deployed to different agencies.
- ◆ VESTA Analytics reporting can be based on agencies.
- ◆ Real-time data, such as the number of queued text and voice calls and their waiting times, can be more meaningful when they are shown by agency and allow for reallocation of resources based on call loads.

Sharing resources between multiple agencies can reduce the costs of technological assets, their maintenance, and their operations. Multi-agency systems provide greater flexibility in the use of resources. For example, a telecommunicator can log off from one agency and log on to another agency from the same console.

Which system resources are dedicated to an agency?

The following system resources are dedicated to an agency:

- ◆ Agent roles — Roles are uniquely configured for an agency.
- ◆ Line and trunk groups — Calls arrive at and originate from an agency on its dedicated line/trunk groups, which can be administrative, emergency, and [direct-access administration line \(DAAL\)](#). Lines are represented on the console as SCAs. ACD queues that distribute calls from lines are represented by MCAs on the console.
- ◆ IP phone groups — Groups of IP phones are dedicated to an agency.

Which system resources are shared by agencies?

The following system resources can be shared by agencies:

- ◆ Location Information Server, ACD server, Voice Mail server, Park server, gateways— Shared between agencies.
- ◆ Printers — Printers can be either shared between agencies or dedicated to a single agency. The agencies have agent roles uniquely configured on them. Whether the printer is shared or dedicated, an ALI Discrepancy report and a CDR report profiles are associated with it. Both ALI Discrepancy report and CDR report profiles are configured for output to file (with a default directory) or printer. The profiles can be assigned to multiple agencies.
- ◆ MDS Configurator and DDS Configurator — Both are shared among agencies.
- ◆ Contact lists — Lists of contacts are shared among agencies.
- ◆ Profiles — CDR Profiles, ALI Discrepancy Profiles, and [Automated Abandoned Callback \(AAC\)](#) Filter Profiles can be shared between two or more agencies.

How are agencies created?

The creation of multiple agencies involves the following basic tasks:

- ◆ Create an agency resource map
- ◆ Assign a unique Agent ID and a name to the agency
- ◆ Create groups of telephony resources and dedicate the groups to the agencies
- ◆ Assign the CDR Profile, ALI Discrepancy Profile, or AAC Filter Profile to the agencies
- ◆ Create user roles for each agency and assign the role to an agent that works on the console
- ◆ Associate layouts with the user roles on the consoles

An agency is identified by an Agency ID and an Agency Name. DDS Configurator and the console are used to configure resources available to an agency. On DDS Configurator, agency identifiers, agent roles, and specified dedicated resources, such as line/trunk groups (and any associated ACD queues), IP phone groups, and printers are agency-specific. On the console, resources such as layouts can be agency-specific.

An agency is identified by an Agency ID and an Agency Name. Agency IDs are unique four-digit identifiers assigned by the administrator. The Agency ID is included for every event in downstream group reports in VESTA Analytics.

The Agency Name has no requirements to be unique on the system. It is used to display the telecommunicators belonging the same agency in the **Agents** window. The name is limited to 64-characters.

A can log on to an agency by using a role ID, which has a set of user permissions. For example, a telecommunicator can log on to Agency A by using a supervisor role that is associated with a layout that contains supervisory features, such as Agent Monitoring. In a separate session, the same telecommunicator could log on to Agency B at the same console by using an agent role, which would not provide access to Agent Monitoring.

Related Links

[Multi-tenant agency system resources](#) on page 177

Default agency

Every system has a Default Agency, which is identified as follows:

- ◆ Name — Default_Agency. The name of the Default Agency can be changed.
- ◆ Agency ID # — 0000

The Default Agency can be used to create a new agency. All resource groups are associated with the default agency before they are dedicated to specific ones in a multi-tenant environment. For example, when telephony resources are created in MDS Configurator, they appear in the default agency in an admin lines group or a phones group. Likewise, in a migration from Sentinel Patriot or the earlier release of VESTA 9-1-1, all groups are maintained and placed in the default agency. The CDR, ALI Discrepancy, AAC Filter profiles are migrated to the default agency as well. The resources can be then allocated to other agencies.

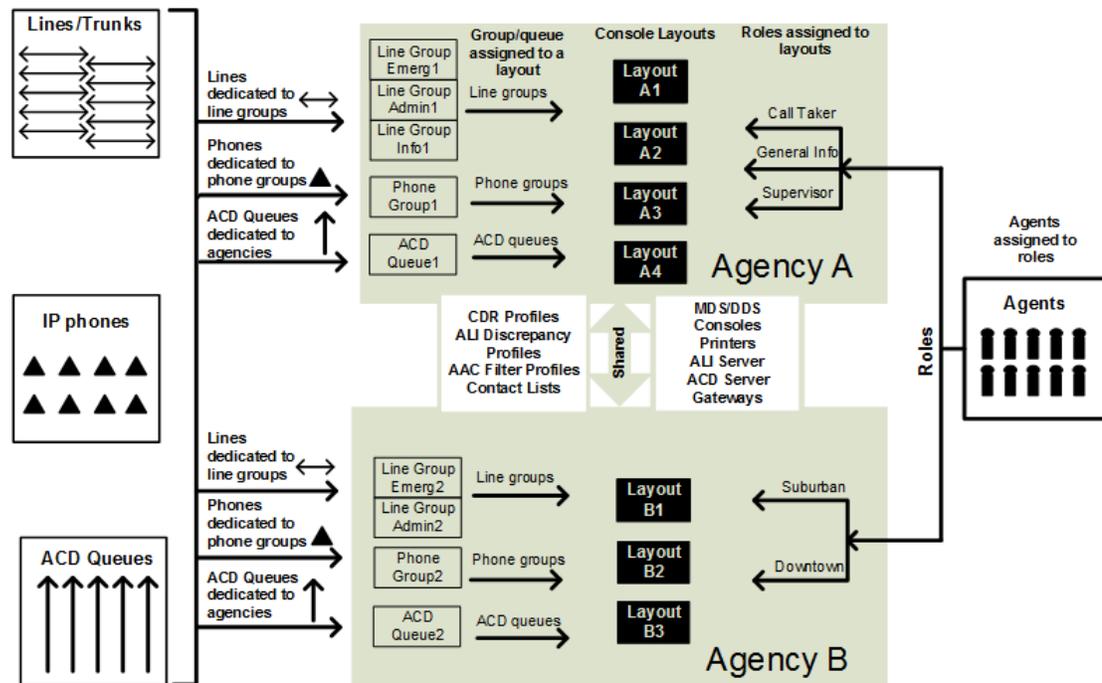
Note that the following criteria applies to the Default Agency:

- ◆ It can be used as the agency for a single-agency system.
- ◆ Its name can be changed from Default Agency to a more meaningful name. It remains in the agency list of DDS Configurator as the default agency.
- ◆ The agency cannot be deleted.

Multi-tenant agency system resources

The following illustration shows the system resources used by multiple agencies on a single system and the relationships among them.

- ◆ Lines and trunks configured on the system are dedicated to line groups. These groups are assigned to either Agency A or Agency B.
- ◆ IP phones configured on the system are dedicated to IP phone groups. These groups are assigned to either Agency A or Agency B.
- ◆ ACD queues are configured on the system and assigned to either Agency A or Agency B.
- ◆ The line groups, IP phone groups, and ACD queues are uniquely mapped to console layouts.
- ◆ Console layouts are associated with one or more roles.
- ◆ A telecommunicator (agent) can log on an agency by choosing a role associated with the agency.
- ◆ A telecommunicator can have multiple roles and possibly choose from more than one layout for any given role. As a result, a telecommunicator can log on to multiple agencies.



Many system resources can be shared between Agency A and Agency B: for example, CDR Profiles, printers (optionally dedicated), consoles, ALI Server, Contact Lists.

The following table provides the following information:

- ◆ Resources that are used by agencies created on a system
- ◆ Specifies whether resources are shared by agencies or are dedicated to an agency
- ◆ Provides details about how the resources are used and any special considerations

Resource	Shared	Dedicated	Details
Media Distribution Server (MDS)	Yes	NA ¹	Agencies share the site MDS Configurator.
Data Distribution Server (DDS)	Yes	NA	Agencies share the site DDS Configurator.
Printer	Yes	Yes	A printer can be either shared by agencies to print CDRs or used by a single agency.
CDR report profile	Yes	Yes	<p>A shared or dedicated printer can be assigned to a CDR report profile. When multiple agencies share a printer, the printed report conforms to the configuration of the CDR report profile associated with an agency.</p> <p>If a call is transferred from one agency to another agency, a CDR report is printed for both agencies on either a shared printer or dedicated printers, depending on how the profiles are configured.</p> <p>When a profile is shared between agencies, the profile will eliminate duplicated CDR records for multi-agency calls: in other words, one instance of the CDR record appears in the CDR stream.</p>
ALI Discrepancy report profile	Yes	Yes	A shared or dedicated printer can be assigned to an ALI Discrepancy report profile.
AAC filter profile	Yes	Yes	The Call Filter Service (CFS) hosts the AAC filter and profile settings and can be shared among agencies. An AAC filter can be used by more than one agency. A VESTA 9-1-1 system can have a maximum of 50 AAC filter profiles: that is, one for each of the maximum 50 agencies.
Enhanced IP phones	NA	Yes	IP phones are associated with an agency through a phone group.
Line trunk groups	NA	Yes	Emergency and Administrative Line groups are allocated to dedicated agencies and ACD queues.
<ul style="list-style-type: none"> ◆ Emergency ◆ Administrative ◆ DAAL 			
Layouts	NA	Yes	A telecommunicator is logged on to a console by using a role associated with the agency. A role can have one or more associated layouts.
Contact lists	Yes	NA	Depending on the configuration, some contact information can be agency-specific.
ACD server (MDS)	Yes	NA	The ACD server distributes calls to queues that are associated with specified agencies.
Voicemail server	Yes	NA	NA

¹ Not Applicable

Related Links

[Agencies](#) on page 174

Agent roles

Administrators can create agent roles to define access permissions to [DDS Configurator](#) and to the console. For example, you can assign system configuration permissions to an administrator role. The agent account then can be associated with the administrator role, which give the account permissions to modify system settings on a shift. An agent role contains specific permissions and is linked with an agency. A telecommunicator logs on an agency using a role associated with it.

The configuration of roles can enable agent-based routing, where calls can be distributed to telecommunicators based on a role number independent of the consoles they are logged onto.

Console-specific permissions are also configured on a per role basis.

Related Links

[Console layouts](#) on page 42

Agent roles and agencies

An agent role is linked with an agency. An agent logs on to a console by using his or her role, which, in turn, logs the agent into a specific agency. Each agency can have a maximum of 200 roles associated with it. After the agent logs into the console based on his or her role/agency, he or she can choose one or more layouts. For a more detailed description of agency roles and IDs, see *Agencies*.

More than one agent role can be assigned to a user. For example, depending on a user's work requirements, a user may require a supervisory role and a telecommunicator role.

An agent role is defined by:

- ◆ An agency
- ◆ Console permissions
- ◆ Role ID for skills-based routing
- ◆ A console layout assigned to the role

Each agency has one Default Role, which is uniquely associated with that agency.

An agency can have multiple roles associated with it. At least one role must be an administrative role. Layouts can be associated with a role.

**Note**

Greetings are not associated with role ID. They are associated by agent name and line/trunk group. In addition to logging on with a default or selected role, the telecommunicator logs on with their agent name. The greetings files tied to the agent name and line group (for example, greetings used for administrative calls) are available for use.

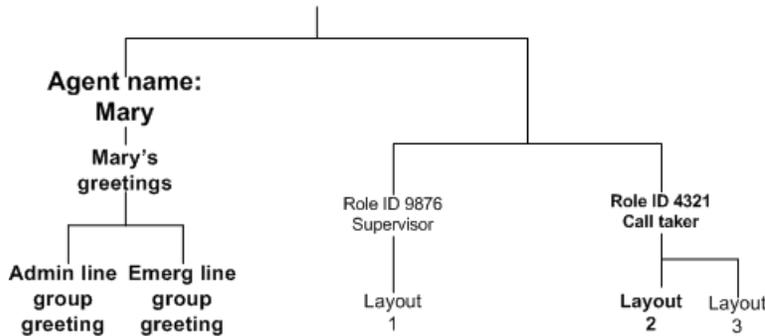
The following diagram illustrates the layout and greetings that are automatically loaded by association with the role ID and agent name on the console.

Telecommunicator Mary logs on to the City Police Agency by using her Agent Name and Role ID 4321. The role ID is associated with telecommunicator Layouts 1 and 2. Mary selects Layout 2. When Mary logs on the agency with her name and an agency's role ID, the following happens:

- ◆ Her greetings become available for the line groups assigned to the agency.
- ◆ The layout that she chooses with the role ID is loaded on the console.

City Police Agency	
Role IDs	Agents
4321	John Mary
9876	Mary

Mary logs on with Role ID 4321 to start work on the City Police Agency.



Agent roles on the console

An agent role is linked with an agency. An agent logs on a console using his or her role, which, in turn, logs the agent into a specific agency. A maximum of 500 roles can be configured on a system. After the agent logs into the console based on his or her role/agency, he or she can choose one or more layouts. For a more detailed description of agency roles and IDs, see *Agencies*.

Alarm panel



Note

The Alarm Panel is optional and is not available for a virtual machine deployment.

The alarm panel is connected to each Data Distribution Service. Monitoring lights report Critical, Major, and Minor alarms on the services. An audible alarm can be set for Major and Critical alarms. The Alarm Cutoff button on the panel silences the alarm. Relays are provided to support external notification of alarms.

Audio alerter

It may be necessary or desirable for PSAPs to deliver audible alerts of ringing calls to locations outside the physical call center (for example, break rooms, rest areas, dormitories, supervisor offices, and so on) under certain conditions (for example, overflow calls, specific lines ringing, and so on). The SIP audio alerter can provide this functionality.

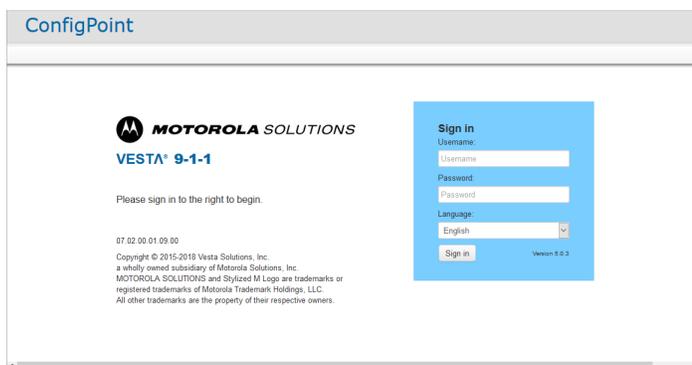
The ALGO 8180 SIP Audio Alerter can be added to a VESTA network and configured to provide audible notification to any location with connectivity to the VESTA network.



The audio alerter is configured as a user and SIP extension in MDS Configurator and as a phone in DDS Configurator. The extension is then added to a routing (ACD) queue. When the extension receives a call, directly or via an ACD queue event, the speaker plays a ring tone (.WAV file). Multiple extensions can be configured and prioritized on an audio alerter.

ESInet configurations

VESTA ConfigPoint is the configurator of the VESTA 9-1-1 ASN which provides the texting interface between the emergency call center and the ESInet. Administrators gain access to the configuration utility through a browser-based user interface. In addition to configurations, ConfigPoint gives administrators some control over operations, such as starting and stopping network elements.



Administrators use ConfigPoint to configure:

- ◆ Hosted text queues in the ASN by agency
- ◆ SIP attributes
- ◆ TCP/UDP proxies
- ◆ Clusters — groups of identical entities that run on separate nodes in order to implement load balancing between them
- ◆ Entities
- ◆ Nodes
- ◆ Routing policies
- ◆ Agency domains

ConfigPoint configuration management system has the following features:

- ◆ **Two stage commit** — A two-phase commit protocol enables administrators to make configurations before finally applying them:
 - ◆ Static (or "Sandbox") configuration of attributes before the configurations take effect. Even in the case of temporary system failure, configuration changes (even partial) are saved.
 - ◆ Final commit application of configuration settings.
- ◆ **Rollback and versioning**
 - ◆ The administrator can roll back the static configuration at any time to a previous version and undo changes on the running system. Static configurations maintain version control and the application software tracks the versioning.
 - ◆ ConfigPoint notifies the application of the changes between the static and running configurations, and backs up the running configuration before applying the changes (to support rollback). All changes are tracked and recorded.
- ◆ **Configuration validations**
 - ◆ ConfigPoint pre-validates changes against a schema before committing the configurations
 - ◆ Cross-domain validation is supported. For example, error checking across Group Y and Group Z
- ◆ **Roles, profiles and modes**
 - ◆ Authentication and authorization of roles
- ◆ **Reports** — ConfigPoint supports reports based on:
 - ◆ Time and date
 - ◆ Administrator ID
 - ◆ System nodes
- ◆ **Real-time Statistics handling** — Statistics (or stats) adapters process and format live system and call information for presentation in, for example, VESTA 9-1-1 Heads-Up Display and the **Queue Display** window.

System utilities

Three utilities are provided for loading configurations and data on the system:

- ◆ Console Configuration Utility for establishing network and mapping parameters
- ◆ Auto Dial Migration and Speed Dial Migration Utilities for uploading contact list configurations
- ◆ Database Schema Upgrade Utility for loading and validating databases required for the consoles

Console Configuration Utility

When the Configuration Utility is accessed on a console, you can use the utility to provide the following information that is required by the console: select a telephone extension, establish connection parameters, select a network interface card, select database servers, and integrate the console with a mapping software, for example, VESTA Locate or ORION MapStar. When the Configuration Utility is accessed on DDS Configurator, only the Database Servers tab is available.



Note

You have to restart the consoles after you finish the configuration.

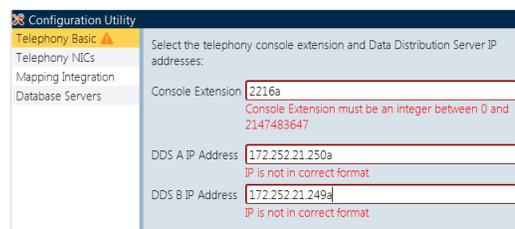
The Configuration Utility opens in wizard mode during the installation of the console. If you have to make changes to the configuration at a later time, you can re-launch the utility from the Start menu.

The utility contains the same information in wizard mode as it does in window mode. If the utility is in wizard mode, you can use the **Back** and **Next** buttons to navigate. If it is in window mode, you can use the menu and the **Apply** button.

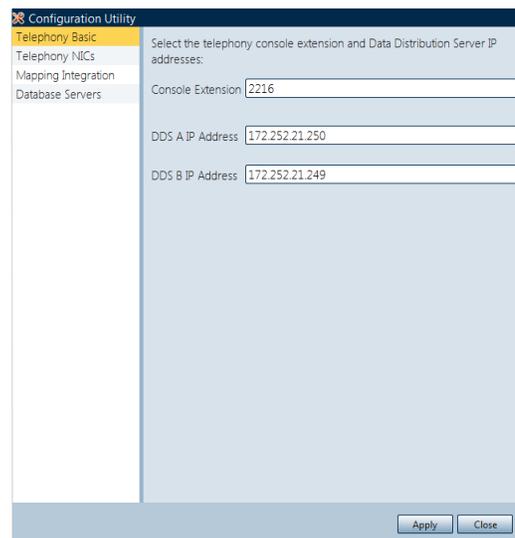
You must be logged on with Windows administrative privileges to configure the utility.

If you try to save incorrectly formatted information, the following error indicators are displayed:

- ◆ A warning icon appears in the tab menu, to the right of the name of the tab on which the information was entered.
- ◆ The box that contains the information is highlighted in red.
- ◆ A message that identifies the problem is displayed below the box that contains the information.



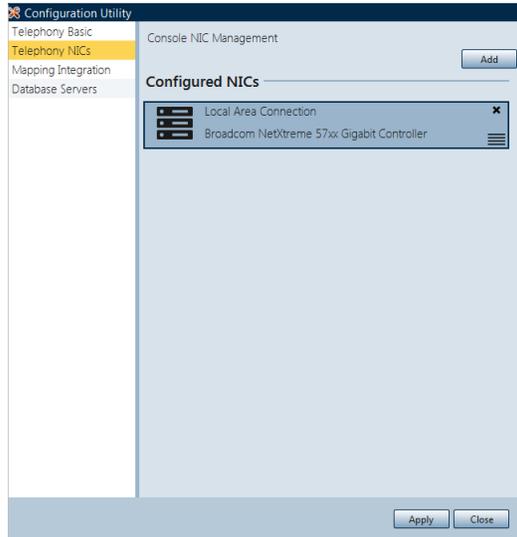
The **Telephony Basic** tab lets you define connection information.



Asset	Description
Console Extension	The phone extension of the console.
DDS A IP Address	The IP address of the DDS-A server.
DDS B IP Address	The IP address of the DDS-B server.

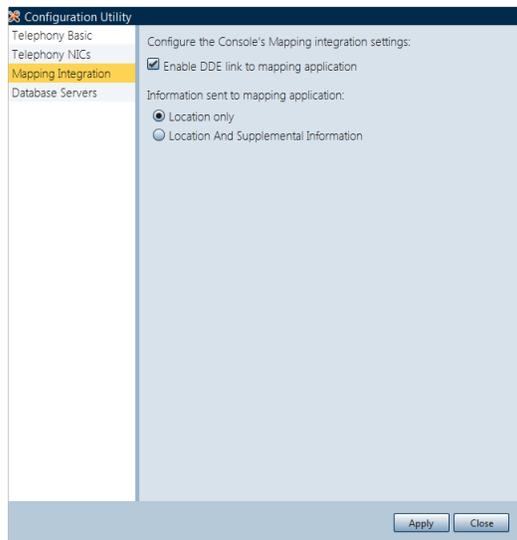
The **Telephony NICs** tab lets you configure the network interface that sends and receives IP packets for the telephony system.

If you are using CommandPOST or [network interface card \(NIC\)](#) teaming, you may need to perform some modifications. For more information, see the *CommandPOST Firewall and VPN Configuration Guide*.



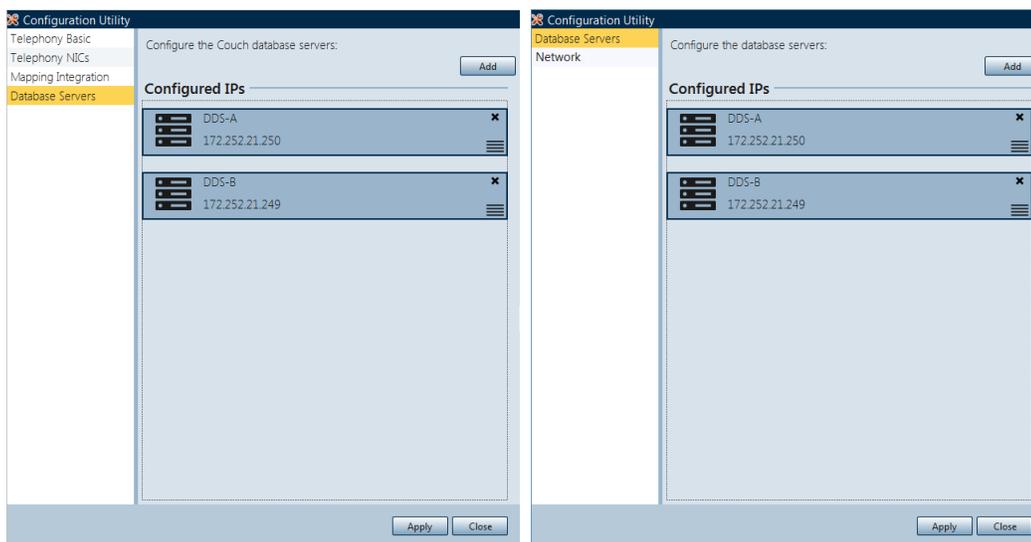
Asset	Description
Configured NICs list	Provides a list of NICs that are available to communicate with the system. The NICs available depend on your computer.
NIC Definition dialog box	<p>Alias box — alias name.</p> <p>Adapter list — list of all available NICs that are not assigned to an alias.</p>

The **Mapping Integration** tab let you configure the console to send location information to VESTA Locate or ORION MapStar application for mapping purposes.



Asset	Description
Enable DDE link to mapping application check box	Allows the console to send data to the mapping application, for example, VESTA Locate or ORION MapStar.
Information sent to mapping application options	Available when you select the Enable DDE link to mapping application check box <ul style="list-style-type: none"> ◆ Location only — sends the ALI information of the caller. ◆ Location and supplemental information — includes the ALI, ALI type, System line ID, and the call ID.

The **Database Servers** tab lets you configure different IP addresses for the database server.



If the Configuration utility is accessed on the DDS server, only the **Database Servers** tab is available.

Asset	Description
Add button	Displays the Edit Database Server dialog box.
Alias box	Displays the alias used for the server, for example, DDS A.
Address box	Displays the IP address for the server.

Database Schema Upgrade Utility

You can perform the following actions with the Database Installation and Upgrade Utility.

Process	Description
Install a database for the first time	Installs only the latest version of the database on both DDS-A and DDS-B servers. This option is available if no database is installed.

Process	Description
Upgrade the database	Installs a newer version of the database. This option is available if a more recent database version is available.
Downgrade the database	Downgrades the database to the selected version of the database. This option is available if the database has been upgraded from a previous revision.
Repair the database	Verifies the current version of the database, and updates all schemas to the current version. This option is available if any database is installed.
Re-upgrade the database from the previous version	Removes data that is stored in the installed version of the database and attempts to redo an upgrade of the previously installed database. This option is available if the database has been upgraded from a previous revision.

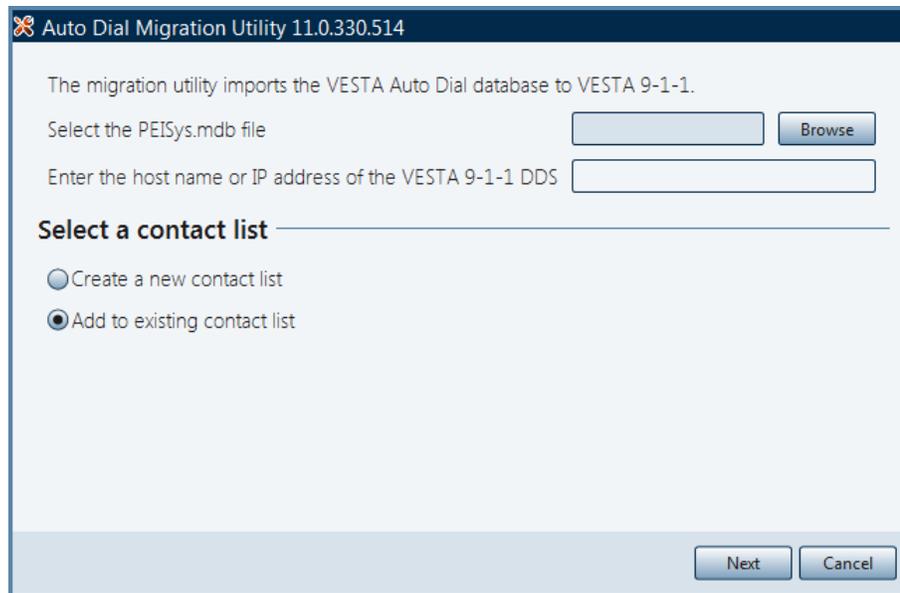
The Database Installation and Upgrade Utility performs the following actions:

- ◆ Creates all required databases in CouchDB
- ◆ Sets up replication between the DDS-A and DDS-B servers
- ◆ Installs or updates any schemas that are needed in those databases
- ◆ Migrates any data from a previous version of the database to a newer version of the

Auto Dial Migration and Speed Dial Migration Utilities

The companion CD contains utilities for importing Auto Dial configurations and Speed Dial configurations. You can import these configurations in the following ways:

- ◆ Into an existing contact list
- ◆ Into a new contact list that you can create with the Auto Dial Migration Utility or Speed Dial Migration Utility.



Auto Dial information

The following Auto Dial information can be imported:

- ◆ Dial entries are imported into contacts.
- ◆ Supplemental dial entries are imported into custom fields.
- ◆ Contexts are imported into contacts
- ◆ Simple lists and associated dial entries are imported into groups with the applicable contacts as assigned members.
- ◆ Tabbed lists are imported into groups with other groups as assigned members.
- ◆ Button groups are imported into groups with the applicable groups and contacts as assigned members.

Speed Dial information

The following Speed Dial information can be imported:

- ◆ Tabs are imported as Groups Descriptions are imported as contact names
- ◆ Each unique line group is imported as a context
- ◆ Each dial string is imported into the context created for the line group
- ◆ Speed dials with the same name in different tabs are imported into the same context
- ◆ A custom field created for the alternate phone number

Page intentionally left blank

List of topics

- ◆ Analysis and reporting overview
- ◆ Instant Recall Recorder
- ◆ Call Detail Records (CDRs)
- ◆ Activity View
- ◆ Event Writer
- ◆ VESTA 9-1-1 Network Management System
- ◆ VESTA Analytics
- ◆ VESTA 9-1-1 Heads-Up Display and Viewer

Analysis and reporting overview

Managing and optimizing the performance of call center operations depend on information collection, analysis, and display based on key indicators.

Reporting tools record, store, and display data about calls, which can be analyzed and published in a variety of formats.

System management tool	Description
Instant Recall Recorder	Allows a supervisor or user to retrieve and listen to previously recorded conversations, recordings in progress, and initiate recordings of conversations.
Call Detail Records	Logs the chronological and operational parameters for each call that is processed.
Activity View	Monitors and displays real-time call information, such as ALI information for each call, queued calls, ringing calls, calls on hold, and abandoned calls from the consoles. Also monitors server statuses.
Event Writer	Operates as a Windows service to collect call and statistical data for display in Activity View.
VESTA 9-1-1 Network Management System	An Open NMS network and systems management platform that monitors ASN nodes, detects events on them, and raises alarms based on specified thresholds. A Web browser presents key operational information in a graphical user interface.
VESTA Analytics	Collects operational and call data as a means to taking key measures of the system for the planning of resources and for supporting decision-making activities.

Instant Recall Recorder

The [IRR](#) is a telephony, radio, and microphone-based message recording and recorded message handling device. You can run the IRR on standalone consoles and listen to recordings on another computer over a network. A dongle on the IRR equipment ensures full security for IRR data.

The following table lists and describes the IRR components:

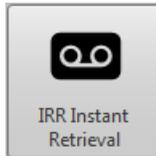
Components	Description
Instant Retrieval	A supervisor or user can retrieve and listen to previously-recorded conversations.
Voice Monitor	A supervisor can listen to a conversation in progress.
Record-on-Demand	The user can initiate a recording at any time.
Control Tower	Provides for the set-up and configuration of IRR

Related Links

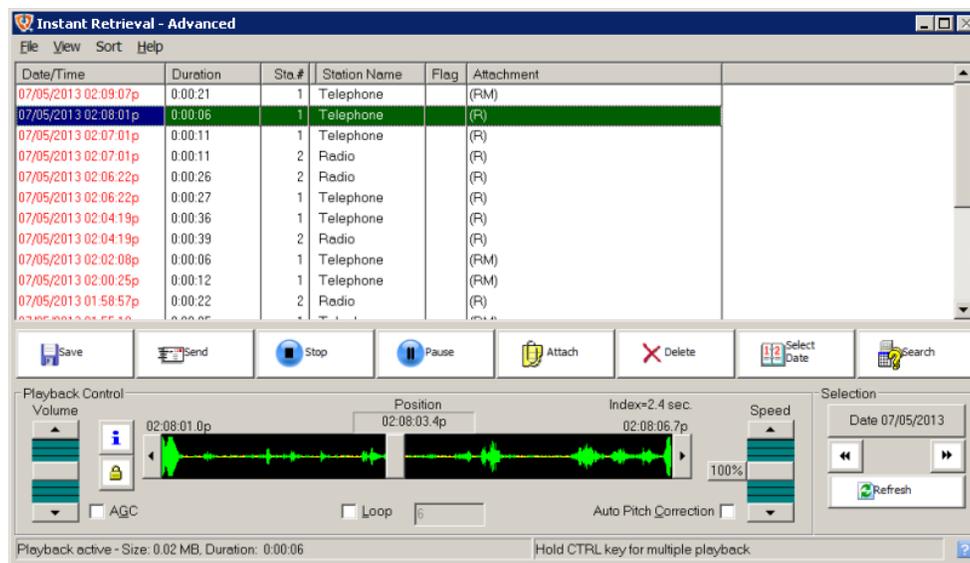
Master Volume window on page 133
 Sound Arbitration Module on page 132

IRR Instant Retrieval

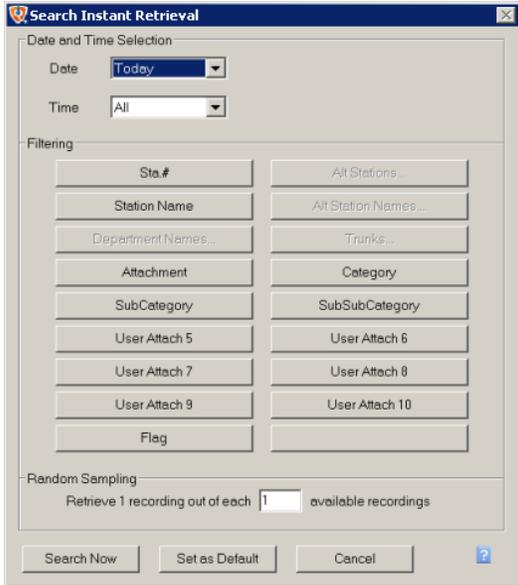
If an IRR is installed on their console's system, the **IRR Instant Retrieval** button lets telecommunicators open the IRR from their console.



The following figure shows an example of the Instant Retrieval dialog box, in which users can access any recording that is on the system. Clicking any listed recording begins the playback of the recording.



You can search recordings using filters based on criteria such as Date, Time, Station, Attachment, or Flag. The following figure shows the Search Instant Retrieval dialog box.



IRR is compliant with the [NENA](#) requirement 3.5 for voice recording systems.

Note

The main features of the IRR are:

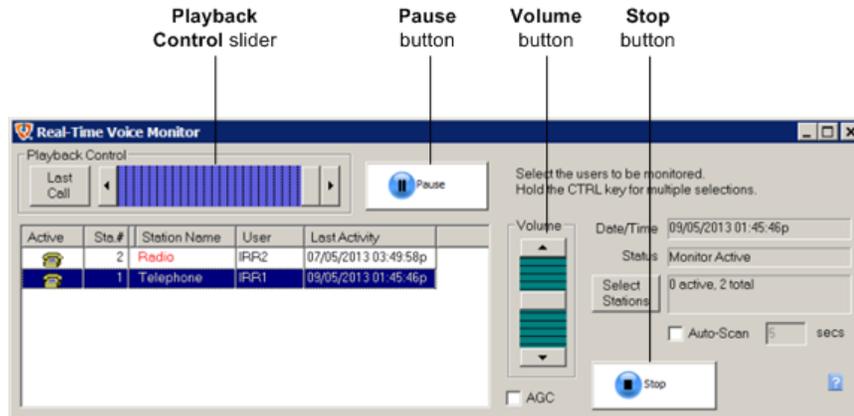
- ◆ Voice recording, playback, monitoring, and exporting tasks
- ◆ Voice activated logging (VOX) starts recording when voice presence is sensed on the radio; an [application programming interface \(API\)](#) is activated for the phone
- ◆ System, supervisor, and user activity logs for the creation, modification, and deletion of user records
- ◆ After a specified period of silence, recording stops
- ◆ Support for single or dual recording channels
- ◆ Recording level adjustment for optimal recording quality
- ◆ Playback speed adjustment with automatic pitch correction
- ◆ Playback looping for thorough review of recordings
- ◆ Attachment of text documents to recordings for annotation of conversations
- ◆ Configurable audio compression ratios
- ◆ Multiple playback mode for automatic synchronization of all recordings based on recording time stamps
- ◆ Manual or automatic archiving and purging of outdated recordings
- ◆ Screen-capture recording capability
- ◆ Customer-translatable user interface
- ◆ Security settings prevent unauthorized access to recordings and events logs

IRR Voice Monitor

A telecommunicator can retrieve a recorded segment of the voice call while the call is still on the line. From the Real-Time Voice Monitor on the [IRR](#), a part of the call can be replayed in situations in which the telecommunicator fails to hear or understand the caller. During the call segment playback, the caller cannot hear the recording.

The Real-Time Voice Monitor contains the following main parts for listening to segments of the current call:

- ◆ **Playback Control** slider — moving the slider plays the earlier and later parts of the call.
- ◆ **Last Call** button — restarts a current call or opens the previous one.
- ◆ **Pause** button — temporarily stops the playback.
- ◆ **Stop** button — stops the playback.



The Real-Time Voice Monitor provides up to 45 minutes of recorded time access for the telecommunicator.

Other controls adjust the volume, display the date and time of the recording, and provide the status of the audio monitoring.

The **IRR Voice Monitor** button can open the Real-Time Voice Monitor directly if the IRR component is installed on the console.



Playing the IRR recording to the caller

The **IRR** playback to phone feature allows the person that is on a call with the telecommunicator to listen to the IRR recording. Once you have initiated the playback of the recording using the IRR application, you can share the playback of the IRR recording with the person on the call by selecting the **IRR Playback To Phone** button in the **Toolbar**. The button becomes available when the telecommunicator is active on a call. Once the telecommunicator selects the **IRR Playback To Phone** button, it changes color to show that the audio path is connected between the IRR application and the phone. The button is unavailable when not on an active call.



Call Detail Records (CDRs)

DDS Configurator can create CDR and system event records from the information it gathers from the consoles and the switch. The CDR output is determined by a CDR profile that is configured on the DDS server. Administrators can configure the profile to collect information about one or more of the following: Administrative calls, ALI, and TTY conversations. Administrators can use the default CDR profile or create a new one. In a single or multiple-agency system environment, an agency must always have a default or customized CDR profile associated with it. An agency can be configured with a maximum of four CDR profiles, each of which can have its own printer destinations and properties.

Depending on configurations in the DDS server, CDRs can also include records of operators logging in and out of their consoles and their ACD Ready/Not Ready state.

A CDR can be printed, saved as a text file, or both. As a text (.txt) file, a CDR file name contains its profile and the date on which the file is created (one file per day). A CDR text file is stored in a directory named after its profile. For example, files generated using the CDR profile *PoliceAgency* are stored in `X:\Program Files\VESTA\DDS\Event Writer\CDR\PoliceAgency` folder, where *X* is a given drive letter.

In DDS Configurator, a CDR profile can also be configured with a printer and one or more user roles. Depending on the agency configuration on a system, a printer can be associated with multiple profiles or dedicated to a single profile. When a user logs on to the system, his or her user role loads a CDR profile and, optionally, the CDR printer.

If more than one agency is operating on the system, a CDR reports all call and location information with its Agency ID.

The following excerpt from a CDR text file shows the arrival of a cellular call on EmergencyLine1. Details of the actions performed on the console are also provided.

```
0000 Default_Agency
ANI          98197762451
CPN          98197770004

Call 398026  Arrives On           EmergencyLine1 Feb/24/15 09:19:08 EST
EmergencyLine1 Goes Off Hook           Feb/24/15 09:19:08 EST
EmergencyLine1 Queue In           Queue 2        Feb/24/15 09:19:08 EST
2202                Is Ringing           Feb/24/15 09:19:08 EST
Call 398026  Cellular Call           Feb/24/15 09:19:08 EST
Call 398026  CPN: 98197770004       Feb/24/15 09:19:08 EST
Queue 2      Queue Out           2202          Feb/24/15 09:19:16 EST
2202                Answers           Feb/24/15 09:19:16 EST
EmergencyLine1 Is Released           Feb/24/15 09:19:22 EST
2202                Hangs Up           Call 398026   Feb/24/15 09:19:22 EST
2202                Releases           Call 398026   Feb/24/15 09:19:22 EST
Call 398026  Finishes           Feb/24/15 09:19:22 EST
--- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---
```

DDS Configurator features a Concise CDR printer option that shows information for a 9-1-1 call on a single 80-character line. Users require a dot-matrix printer for the one-line CDR. A concise CDR line contains the Agency ID of the call event.

```
070910 155225 EL Germy911Linexyz 8197782000 155227 Console _321__x 155243
```

Activity View

Activity View provides real-time data for a set of analysis tools that help manage the operation of a call center. Managers can monitor queued calls, ringing calls, on hold calls, and abandoned calls from any console. They can also retrieve location information for each call.

Activity View can help improve response times. For example, because location information is available for all active calls, managers can detect a spike in calls from a location and alert telecommunicators. Displayed information can include:

- ◆ How long has a telecommunicator been on a call?
- ◆ What kind of call (Emergency or Admin)?
- ◆ How many Emergency and Administrative calls are in a group **ACD** queue?
- ◆ How many emergency and administrative calls are on hold, and how long has each call been queued?



A **Hardware Against Software Piracy (HASP)** key is required for real-time information.

Note

Activity View displays call information with the following windows.

The **Activity Document** windows contain real-time information about active calls, ACD queues, trunks, lines, and so on.

The screenshot displays the Activity View software interface with the following sections:

- Active Calls:** A table with columns: CPN, Call ID, Call Type, ANI / Dialed Number, ESN, Source, Src. Operator ID, Status. It shows two rows of queued calls.
- Call-taker:** A table with columns: Answer Position, Ext., Operator ID, Group, Status, Party, ANI / Dialed Number, Duration. It shows two rows of call-takers.
- Group Status:** A table with columns: Available, Group, Busy, Unavailable, Logout. It shows status for PHONES and Test groups.
- Group Information:** A table with columns: Group, 911LQ, 911H, 911LH, 911A, 911LA, ADMQ, ADMLQ, ADMH, ADMLH, ADMA, ADMLA. It shows performance metrics for Test and PHONES groups.
- Trunk:** A table with columns: Trunk, Status, ANI, Call-taker, Operator ID, Duration, Total Duration. It shows status for 911Queue, Emerg1, and FromJaquarLine2.
- Line:** A table with columns: Line, Status, Caller Id / Dialed Number, Call-taker, Oper. ID, Duration, Total Duration. It shows status for Admin1 and AydinCortes F...
- ACD Queue:** A table with columns: Name, Number of Calls, Longest Call Duration. It shows metrics for 911Queue, 911Queue2, AdminQueue, EmergencyQueue, and FromJaquarQ1.

The **Diagnostics Document** windows contain real-time diagnostics information about services and programs.

Type	Server	Time	Time Zone	Source	Diagnostic
Warning	DDS B	08/31/2012 10:33:58	EDT	Resource Manager	Failed to ping gateway sipperl_akumar at 172
Warning	DDS A	08/31/2012 10:34:00	EDT	Resource Manager	Failed to ping gateway sipperl_akumar at 172
Info	DDS B	08/31/2012 10:34:04	EDT	Resource Manager	Failed to ping gateway sipperl_akumar at 172
Info	DDS A	08/31/2012 10:34:05	EDT	Resource Manager	Failed to ping gateway sipperl_akumar at 172
Info	DDS B	08/31/2012 10:34:05	EDT	Resource Manager	Failed to ping gateway sipperl_akumar at 172
Info	DDS A	08/31/2012 10:34:07	EDT	Resource Manager	Failed to ping gateway sipperl_akumar at 172
Warning	DDS B	08/31/2012 10:34:07	EDT	Resource Manager	Failed to ping gateway sipperl_akumar at 172
Warning	DDS A	08/31/2012 10:34:08	EDT	Resource Manager	Failed to ping gateway sipperl_akumar at 172
Info	DDS B	08/31/2012 10:34:12	EDT	Resource Manager	Failed to ping gateway sipperl_akumar at 172
Info	DDS A	08/31/2012 10:34:14	EDT	Resource Manager	Failed to ping gateway sipperl_akumar at 172
Info	DDS B	08/31/2012 10:34:14	EDT	Resource Manager	Failed to ping gateway sipperl_akumar at 172
Info	DDS A	08/31/2012 10:34:15	EDT	Resource Manager	Failed to ping gateway sipperl_akumar at 172
Warning	DDS B	08/31/2012 10:34:15	EDT	Resource Manager	Failed to ping gateway sipperl_akumar at 172
Warning	DDS A	08/31/2012 10:34:17	EDT	Resource Manager	Failed to ping gateway sipperl_akumar at 172

Minor: 246 Major: 4348 Critical: 1

DDS A DDS B MDS A MDS B

The **Status Document** windows contain real-time status information about services and programs.

App. Type	Server	Time	Name	Value
CallP Manager	DDS A	08/31/2012 10:33:40	Cassidian Console 2242	Disconnected
CallP Manager	DDS B	08/31/2012 10:33:40	Cassidian Console 2242	Disconnected
Activity Manager	DDS A	08/31/2012 10:34:35	Cassidian Console - ...	Disconnected
Activity Manager	DDS B	08/31/2012 10:34:35	Cassidian Console - ...	Disconnected
ALI Manager	DDS A	08/31/2012 10:33:21	ALI Port 1	Connected
ALI Manager	DDS B	08/31/2012 10:33:21	ALI Port 2	Connected
Activity Manager	DDS A	08/31/2012 10:19:48	Cassidian Console - ...	Connected
Activity Manager	DDS B	08/31/2012 10:19:48	Cassidian Console - ...	Connected
CallP Manager	DDS B	08/31/2012 10:23:10	Cassidian Console 2203	Connected
CallP Manager	DDS A	08/31/2012 10:23:10	Cassidian Console 2203	Connected
Activity Manager	DDS B	08/31/2012 09:55:56	Cassidian Console - ...	Disconnected
Activity Manager	DDS A	08/31/2012 09:55:55	Cassidian Console - ...	Disconnected
CallP Manager	DDS A	08/31/2012 09:55:27	Cassidian Console 2213	Disconnected
CallP Manager	DDS B	08/31/2012 09:55:27	Cassidian Console 2213	Disconnected
Resource Man...	DDS A	08/31/2012 09:47:12	MDSA-Presence Server	Service is Up
Resource Man...	DDS A	08/31/2012 09:47:12	MDSA-ACD Server	Service is Up
Resource Man...	DDS A	08/31/2012 09:47:12	MDSA-Keepalive Pro...	Service is Up

Minor: 246 Major: 4353 Critical: 1

DDS A DDS B MDS A MDS B

The **ALI Statistics Document** windows contain statistical location information for location information channels and ports.

The screenshot shows the Activity View application window titled "Activity View - [North Sector.sts - ALI Statistics Document]". It features a menu bar (File, Preferences, Activities, Connection, View, Window, Help) and a toolbar. The main content area is divided into two sections: "ALI Groups" and "ALI Ports".

ALI Groups Table:

Server	Name	Queries	Failed Queries	Last Query Time	Query Average Time
DDS B	ALI Group 1	186	0	0.343000	0.595070
DDS A	ALI Group 1	203	0	0.343000	0.610512

ALI Ports Table:

Server	Name	Status	Msg Rxd	Msg Txd	Disconnections
DDS B	ALI Port 2	Connected	186	186	0
DDS A	ALI Port 1	Connected	203	17	0

At the bottom of the window, a status bar displays: Minor: 246 (yellow), Major: 4359 (red), Critical: 1 (red). On the right side of the status bar, there are four green buttons labeled DDS A, DDS B, MDS A, and MDS B.

A Marquee bar displays messages configured by the administrator at a console. The Marquee bar can broadcast messages at the consoles about events or incidents that may affect the call center operation.

Display Panel

Display Panel presents Activity View information in a simplified and readable format that supervisors can use to track the performance of a call center. Display Panel can be presented in a large screen for general viewing. Live **ACD Queue** and **Phone Group** data (such as call volumes, longest queue wait time, and telecommunicator availability) enable call center management to respond quickly to changing conditions. What information is displayed and how it is displayed can be tailored to the needs of the call center. Any call center running Activity View—with a HASP key that provides licensing for the Activity View—can use Display Panel to present their information.

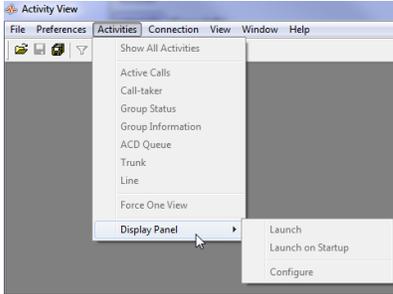
The Activity View Display Panel consists of three main elements:

- ◆ Title bar — contains the current date, time, and the Menu Bar.
- ◆ Menu bar — title of Display Panel, the Minimize, Maximize and Close buttons. It is hidden when Display Panel is active and fades in when you move the mouse cursor over it. It fades out after five seconds of cursor inactivity.
- ◆ Display area — contains the user-defined cells, each of which contains specified information about a monitored entity, such as one or more **ACD** queues or a phone group: Number of Queued Calls, Elapsed Time of Longest Queued Call, Number of Available Agents, Number of Active Calls.



Note

The Number of Available Agents shown in the Display Panel and the number of agents with available **ICAs** do not necessarily match. For example, the Number of Available Agents decreases by one after a call is moved from an **ICA** for handling on a **PCA**. The system counts the telecommunicator as unavailable despite that the **ICA** is free to receive **ACD** calls. In the VESTA 9-1-1 HUD, the number of telecommunicators ready to take calls does not decrease when the call moves from the **ICA** to the **PCA**.



Users can configure the display grid with the following layout settings and color schemes:

- ◆ Title of Display Panel
- ◆ Default color schemes, font, color threshold definitions: for example, a change in color for a value shows that a specified value has been reached.
- ◆ Cell content settings — a description of the cell content, the chosen entity (ACD Queue or Phone Group), and attributes of the entity, such as the number of calls pending in a selected number of ACD queues, elapsed time of the longest queued call in a selected number of ACD queues, number of agents available in a phone group, number of active calls in a phone group.

Display also contains the following features:

- ◆ Audible alerts
- ◆ Multiple monitoring display panels

Event Writer

Event Writer operates unattended as a Windows service on the [DDS](#) server and records statistics and call detail events as they occur. Its records can be viewed in Activity View. Event Writer records allow call center managers and administrators to monitor DDS services.

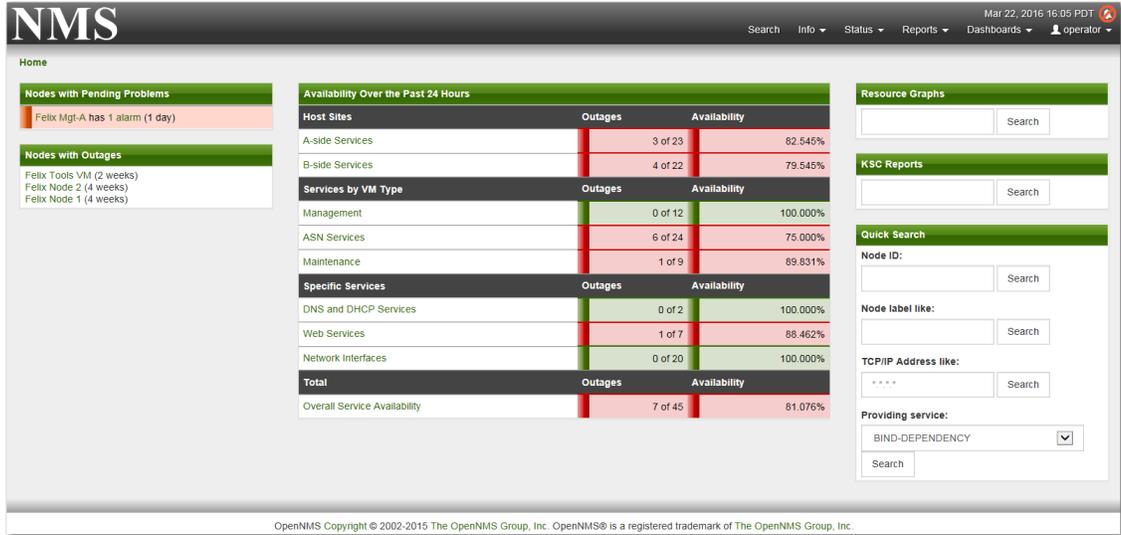
VESTA 9-1-1 Network Management System

By using the OpenNMS-based network management and monitoring program, administrators can deploy tools on the [ASN](#) that collect and present system data and send notifications of critical events. Alarms notify administrators of events, such as applications that fail to start, configurations that cannot be retrieved, errors in location information retrieval, problems connecting with ConfigPoint, and text call messaging failures. The VESTA 9-1-1 Network Management System operates in a Web browser and is configurable to the needs of sites, agencies, and users.

The system enables you to

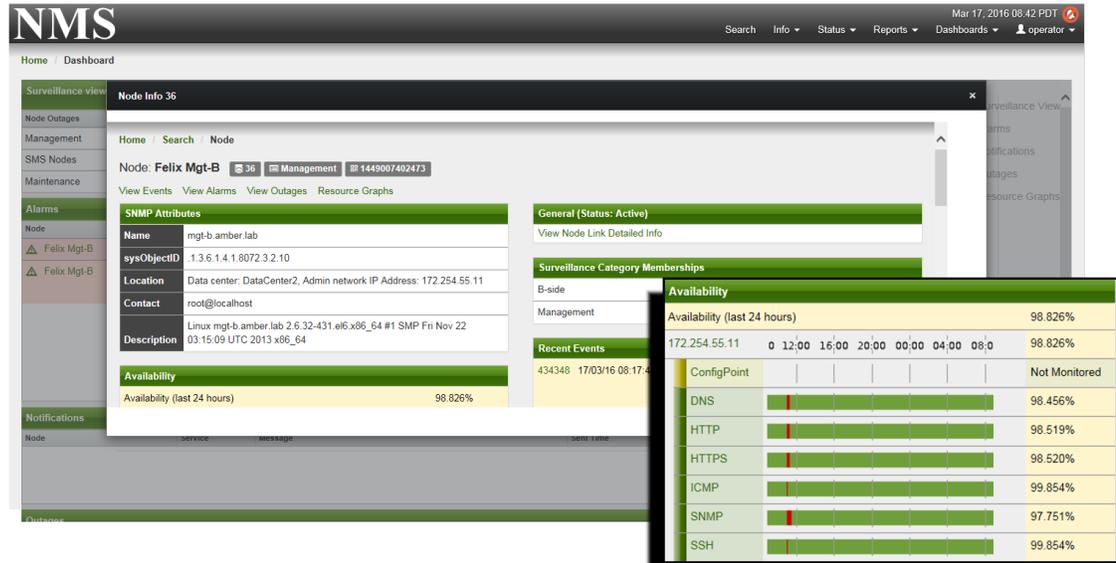
- ◆ View service statuses.
- ◆ Manage system events and notifications.
- ◆ Respond to alarms generated by single or multiple events.
- ◆ View nodes configured on the system and their conditions.
- ◆ Customize data views to the needs of agencies and staff roles.

The Home page of the management system shows the kind of information you can get at a glance. You can check node, service, and service statuses over the past 24 hours as well as any notifications, all clearly presented in tables and other interface objects.



VESTA 9-1-1 node conditions

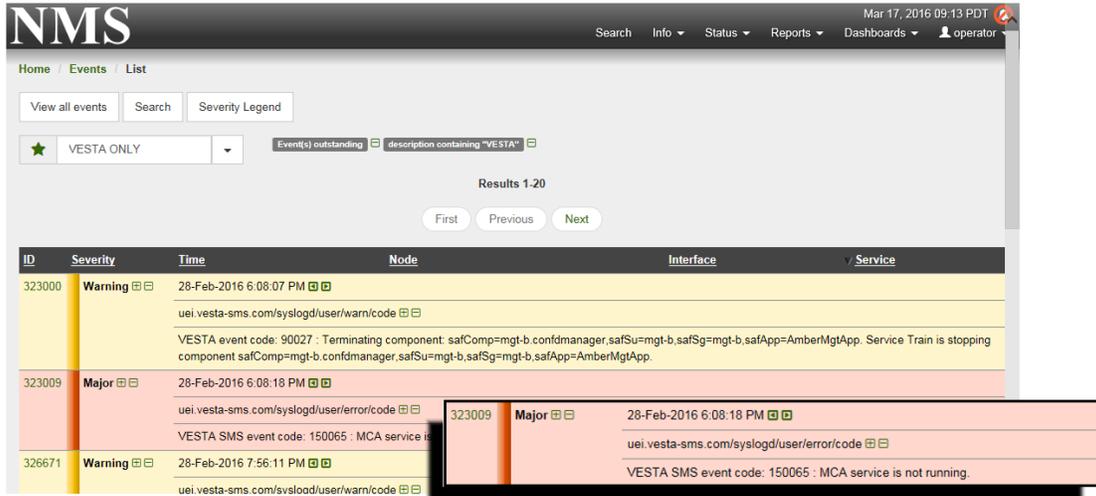
The VESTA 9-1-1 Network Management System monitors the conditions of system nodes by performance attributes, such as 24-hour availability, recent events, and recent outages. Links within a report of each node take you into greater detail. The following image shows information from an ASN node. You can navigate from the general view of the node to details of notifications on the node and recent events.



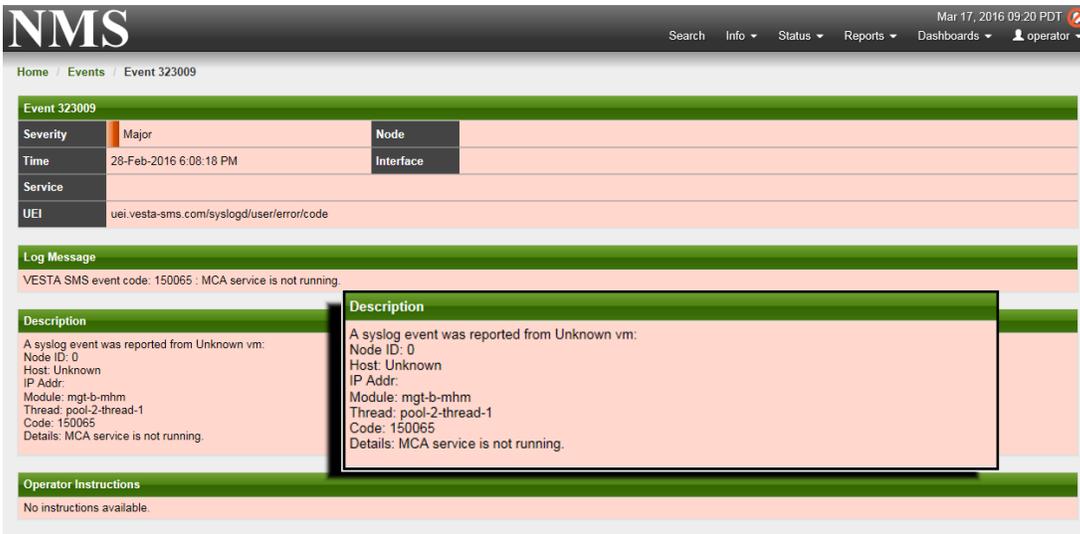
Event and alarm management

The VESTA 9-1-1 Network Management System generates events from error and status information in the syslog logging facility on the CentOS operating system. You can view all or specified queried events in a table where they can be sorted by columns: for example, **Severity**, **Node**, or **Time**. Event notifications can be targeted to specified users, roles, and groups.

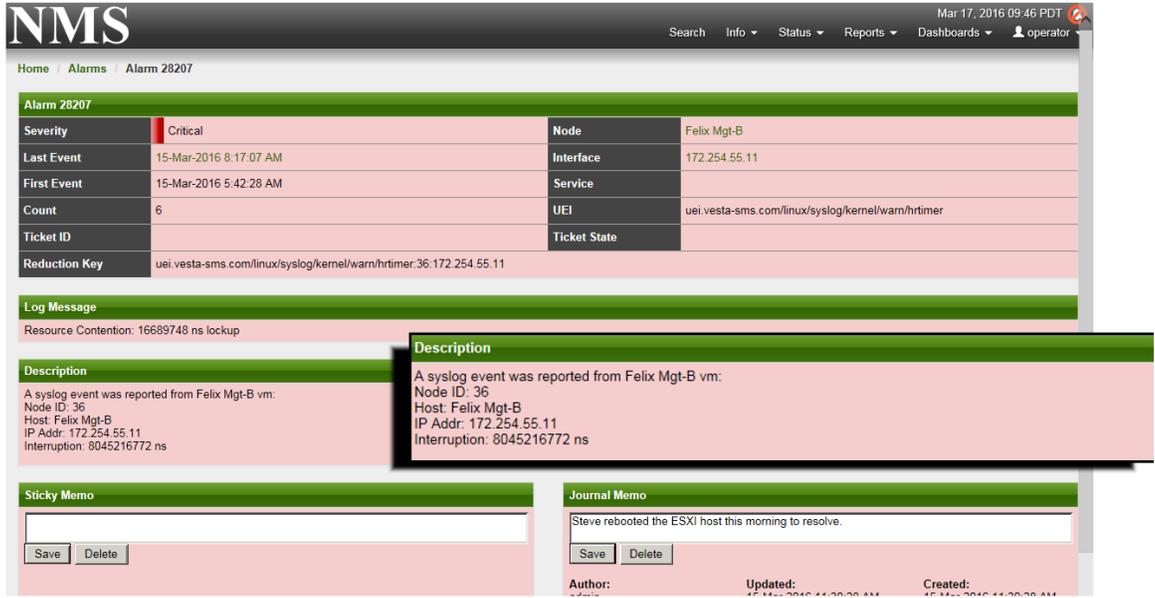
The following image shows a list of events recorded on the system. Each listed event shows its general information.



Clicking on the event ID opens a detailed description of a single event, including the log message and source of the event itself.



Important events can become alarms. As performance and response time data are monitored, reaching a set threshold can trigger an event followed by a notification and, potentially, an alarm. You can view alarm status and details in lists and in a detailed view. The following image shows a detailed view of an Alarm. Detailed alarm views let you enter your own notes (or *memos*) in an alarm notification.

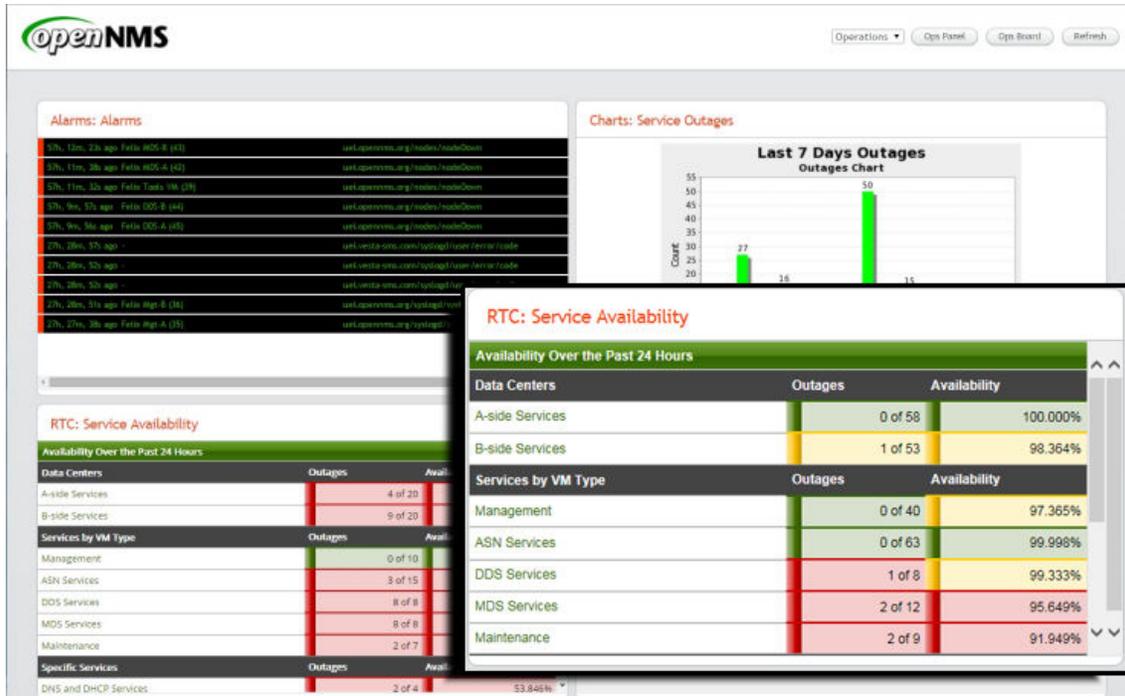


Customization of views

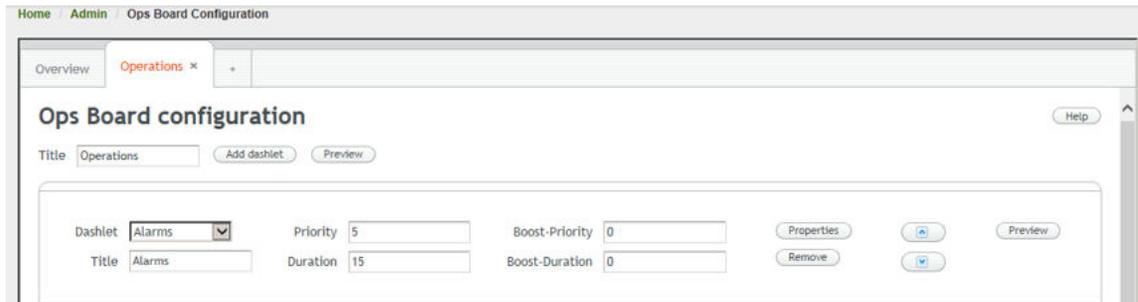
The VESTA 9-1-1 Network Management System consists of a configurable user interface that you can use to build views of operational and performance data consisting of tables, reports, and charts. The views can be the building blocks for dashboards and operational panels.

Users can modify the default event processing and user interface features. For example, you can create or change:

- ◆ Notifications and alarm thresholds. You can also sort and filter alarms, add and delete notes, acknowledge alarms, clear alarms, and escalate alarms.
- ◆ Customizable dashboards that display important network issues: for example, surveillance views of monitored nodes, unacknowledged alarms, notifications, network outages, reports, and performance graphs. The Home page is an example of a default dashboard. Users can create their own dashboards
- ◆ Ops (operations) boards that present visual representations of monitoring information (for example, service outages, service availability, node outages, alarms) in configurable dashlets: that is, sub-categories of information. The dashlets can be displayed together on an Ops Panel or in a rotating view on the Ops Board. The type of information for display can be customized for operators of different responsibilities. The following image shows the default Ops Panel dashlets, including alarms, service outages, and availability dashlets.



You can also add and modify a dashlet, such as the one shown in the following example. In the Alarms dashlet, you can set the durations and the priorities of the alarms.



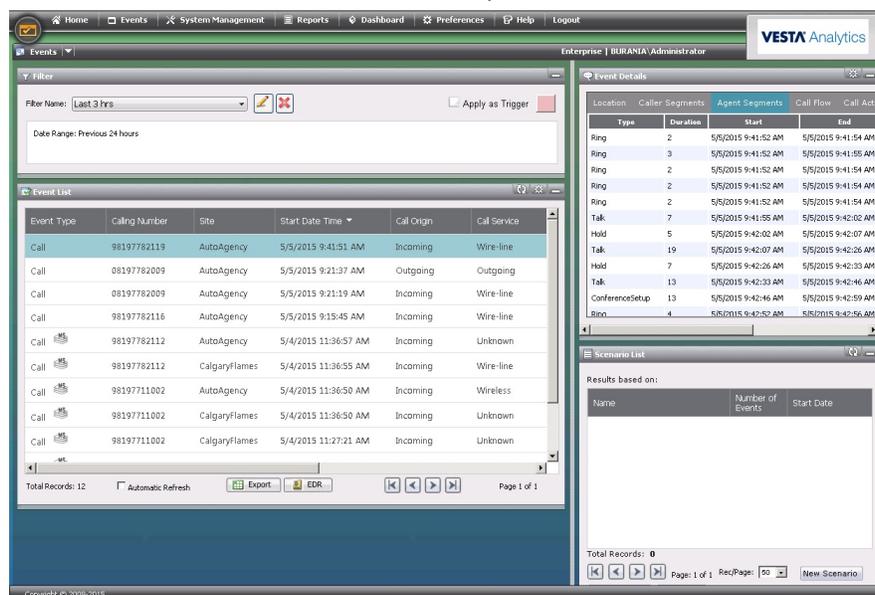
You can find out more about the VESTA 9-1-1 Network Management System and its customization procedures in the *VESTA 9-1-1 NMS Reference Manual* and *VESTA 9-1-1 Network Management System User Guide*.

VESTA Analytics

VESTA™ Analytics is a Vesta Solutions next-generation Management Information System (MIS). It has the following features:

- ◆ Home page — VESTA Analytics Home page provides a simple calling party number (CPN) or date-time search, and one-click access to report apps. The following report apps are installed with VESTA Analytics as samples:
 - ◆ Last Month Call Count by Call Types per Trunk Line
 - ◆ Last Week Call Count by Day per Agent
 - ◆ Last Week Wait Time Range per Call Category
 - ◆ Previous 365 days Call Count by Month per Speed Dial

- ◆ Standard report templates — Report templates are packaged with VESTA Analytics to obtain statistics about the operations of a site, including
 - ◆ Agent ring counts and transfers
 - ◆ Call counts by call category, period (hour, day, week, month, quarter, year)
 - ◆ Call wait time range
 - ◆ Call durations
- ◆ Fee-based advanced reports — More advanced reports are available, such as abandoned call summaries, agent efficiency rankings, agent statistics, answer performance, and agent offline time range
- ◆ Event display — The Event List and Event Details panes display information that VESTA Analytics captures from integrated systems. Events are site activities that occur during a particular interval of time and can be related to an incident—an individual or distinct occurrence such as a fire or an accident. Custom filters can be created to find events meeting specific conditions. The following sample **Events** page shows the four option window panes:
 - ◆ **Filter** pane displays the criteria used to select the events to be displayed. A filter trigger can highlight events as they enter the event list.
 - ◆ **Event List** pane lists two types of displayed events: calls and **CAD** events. Users have display options such as order of appearance, number of rows, page refresh rates, and so on.
 - ◆ **Event Details** pane provides additional information on the event selected in the **Event List** pane. Tabs categorize the information details.
 - ◆ **Scenario List** pane displays scenarios, a collection of related events related to a particular incident. Scenario information includes date and time of associated events and the events themselves that comprise the scenario.



- ◆ Trigger filtering — Events meeting user-defined criteria can be highlighted as they enter the event list, indicating a possible problem event or trend.
- ◆ Scenario and event management — VESTA Analytics automatically associates related events gathered from integrated systems such as the call processing system and CAD. The Scenario Management system provides manual control over associations, and creates associations between complex scenarios. For example, the Scenario Overview Report displays information for the call and CAD events that are associated with a

specific incident such as a fire or burglary. The report can contain information for an incident, such as the site of the incident, type of scenario, call information, location information, and CAD information (for example, name of emergency responder, CAD type, such as fire or accident).

- ◆ **Scenario Information** — Including name of the scenario site, a description of the scenario, the number of events associated with the scenario.
- ◆ **Call Information** — Including, call type, calling number, time and duration, agent, trunk/line, console, location information
- ◆ **CAD Information** — Including name of site that processed CAD, agency, incident number, house and street number, and so on.
- ◆ Microsoft SQL Server Analysis Services (SSAS) — A database structure has been implemented that enables more efficient reporting.
- ◆ Custom grouping and filtering — Users can create custom groups and filters to generate advanced reports. VESTA Analytics also supports shift-based reporting.



VESTA Analytics is purchased separately from the console.

Note

Licensing

VESTA Analytics is offered through four base licenses, which are tailored to the size and setup of the site:

- ◆ **Standard** — Covers standalone and geo-diverse systems on a single CTI deployment in which configuration and data are the same in a redundant server environment.
- ◆ **Lite** — Operates like Standard but designed to meet the needs of call centers that process fewer than 100,000 calls each year and are staffed with ten or fewer call taking positions.



VESTA Analytics Lite is provided with VESTA 9-1-1™ Core and VESTA™ 9-1-1 Essentials deployments of two to five positions.

Note

- ◆ **Hosted** — VESTA Analytics supports multiple agencies hosted on a single VESTA 9-1-1 system. The Hosted Edition License includes the VESTA Analytics Site Collection license that defines the number of hosted agencies. Reports can be generated from the data of separate agencies. Standard licensing is possible for multiple agencies, in which data and reports are not generated by agency but by roles, as if the data were collected from a single site.
- ◆ **Enterprise** — The enterprise solution supports multiple computer telephony interface platforms such as VESTA DMS-100, VESTA Pallas, and VESTA CS in combination with VESTA 9-1-1.

VESTA 9-1-1 Heads-Up Display and Viewer

System information can be displayed outside the console on a wall-mounted screen or a PC workstation viewer. Both are connected to a network server that receives the displayed data from other system components.

VESTA 9-1-1 Heads-Up Display (HUD) is a large television or computer monitor that can be mounted on a wall. The display presents voice and text statistical queue data in a table format and can be configured with threshold alerts to draw attention to critical issues in the queues.

AGENCY	QUEUE	CALLS	AWT	LWT	LOGD IN	READY	NREADY
Temecula	TextQueue	2	0:24	0:02	9	1	0
Murrieta	PriorityQueue	3	0:07	0:04	4	0	2
Murrieta	RoutedQueue	2	0:34	0:04	0	3	2
Murrieta	CallBack	1	0:05	0:21	1	4	2
Murrieta	Admin	4	0:05	0:03	8	0	1
Murrieta	SMS	2	0:23	0:02	0	3	0

60% of U.S. Public Safety Answering Points and a growing number of control rooms around the world

Predefined templates control what appears on a HUD Wallboard or HUD Viewer. The templates have predefined thresholds, columns, and sort orders. Custom ticker and priority messages can also be sent to a HUD Wallboard or HUD Viewer. The content of ticker and priority messages are controlled by you through Design Studio Lite.



Note

Prior to delivery of your system, Vesta Solutions will help you to customize the predefined templates according to the needs of your site (add a logo, add date and time, define thresholds, add visual and audible alerts, and change the appearance of fields). After delivery, if you need to change the templates or create new ones, contact Vesta Solutions.

Two types of HUD templates are available: wallboard and viewer.

The workstation viewer can also be configured on an workstation to displays the same or different data columns as the VESTA Heads-Up Display. Queue information can be also filtered by agency.

AGENCY	QUEUE	QUEUE TYPE	MEDIA TYPE	CALLS	LWT	AWT	SAWT	LOGD IN	READY	NREADY	AVAIL
Temecula	911PolePos	Priority	Voice	0	0:03	0:06	0:11	2	2	2	1
Temecula	911SafPic	Priority	Voice	2	0:02	0:19	0:09	3	3	0	0
Temecula	PtlLane	Routed	Voice	1	0:10	0:07	0:08	6	2	2	2
Temecula	Abandoned	Abandoned	Voice	4	0:03	0:12	0:05	3	4	1	1
Temecula	Spanish	Priority	Voice	9	0:03	0:06	0:12	1	1	2	1
Temecula	NonEmergency	Admin	Voice	9	0:00	0:06	0:05	6	1	1	0
Temecula	TextQueue	Priority	SMS	6	0:03	0:24	0:05	8	4	0	2

There will be an all hands call at 12:30 pm, please attend

June 7, 7:51 AM | 79°

The following table contains the queue data columns that can be displayed in the HUD Wallboard and HUD Viewer. The wallboard template can support a maximum of eight columns comprised of two text columns and six numerical columns. The viewer templated can support all the columns.

VESTA 9-1-1 HUD	VESTA 9-1-1 Viewer	Column content
AGENCY	AGENCY	Name of agency
QUEUE	QUEUE	Name of queue or a queue roll-up (grouped queues)
QUEUE TYPE	QUEUE TYPE	Priority, Routed, Abandoned
MEDIA	MEDIA	Voice, Text

VESTA 9-1-1 HUD	VESTA 9-1-1 Viewer	Column content
LOGD IN	LOGD IN	Number of telecommunicators and phones logged into the queue
READY	READY	Number of telecommunicators ready to take ACD calls
NREADY	NREADY	Number of telecommunicators not ready to take ACD calls
NAVAIL	NAVAIL	Number of telecommunicators not available to take ACD calls
CALLS	CALLS	Number of calls in the queue
LWT	LWT	Longest call wait time
AWT	AWT	Current average wait time of the calls in the queue
SAWT	SAWT	Average wait time of calls within a rolling time range: "Last :30 Min", "Previous Hour", "Previous 4 Hours", "Previous 8 Hours", "Previous 24 Hours", "Yesterday", "Last 7 Days", and "Week to Date". (Statistical Average Wait Time)

Visual alerts and audio alerts can be applied to numerical thresholds.

VESTA 9-1-1 visual alerts are triggered when a minor, medium, or major threshold is reached. An alert message can be displayed when a threshold level is reached (by default, only major alerts are displayed). Visual alerts can only be displayed on wallboards, they cannot be displayed on viewer templates. The visual alert types are:

- ◆ Yellow (minor)
- ◆ Orange (medium)
- ◆ Red (major)

Visual alerts can be displayed in the top right-hand corner of screen or as a big square in the bottom right of the screen, as shown in the following illustrations.

The screenshot shows the VESTA 9-1-1 Agency Wallboard interface. At the top, it displays 'VESTA 9-1-1 | HEADS-UP DISPLAY' and the date 'January 31' with the time '14:03:57'. Below this is a summary bar for '911 Wireless' (LWT = 00:22) and '911 Wireline' (NReady = 4). The main data table is as follows:

QUEUE/GROUP	WAITING	LONGEST	LOGD IN	BUSY	N.READY
911 Wireless	6	0:22	17	2	6
911 Wireline	5	0:19	10	1	4
Corona Admin	5	0:17	11	6	5
Corona	3	0:16	1	1	0
Corona Main	13	0:25	32	9	6
RIVSO	4	0:14	3	1	1
SC ADMIN	0	0:00	4	2	0

At the bottom left of the wallboard, it says 'rqueue/Ticker using Design Studio Lite >'.

VESTA 9-1-1 | HEADS-UP DISPLAY 9:10:09
February 3

Queues

QUEUE	CALLS WAITG	LWT	LOGD IN	READY
911 Wireless	6	0:10	7	10
911 Wireline	6	0:18	15	8
Corona Admin	6	0:19		
Corona Hazmat	3	0:06		
Corona Main	17	0:31		
RIVSO	3	0:02		

ALERT
911 Wireline LWT = 00:18

(Wallboard 2); with ECC Admin and ECC_NEC < Edit Marquee/Ticker using Design Studio Lite >

Audible notifications can be also applied to thresholds on minor, medium, and major alerts.

Page intentionally left blank

List of topics

- ◆ Product components
- ◆ Hardware specifications
- ◆ Full deployment system capacities
- ◆ Pocket Dial Filter specifications
- ◆ Automated Abandoned Callback specifications
- ◆ Queue Selector specifications
- ◆ Voice prompt specifications
- ◆ Enhanced Data Requests
- ◆ Audio
- ◆ VESTA 9-1-1 Core/VESTA 9-1-1 Essentials capacities
- ◆ Time synchronization
- ◆ QoS
- ◆ Location information
- ◆ CAD RS-232 protocols

Product components

System components and utilities

See the Release Notes for the currently-used versions.

VESTA 9-1-1 component	Description
Activity View	Provides live data of call center activities for analysis and management
Advanced Services Node (ASN)	Terminates NG-911 network text calls on VESTA 9-1-1
Auto Dial Migration Utility	Imports auto-dial information into VESTA 9-1-1
Call Filter Service (CFS)	Hosts the Pocket Dial Filter and AAC call filtering services and configuration profiles
Console Configuration Utility	Establishes connection parameters, provides error notification and NIC selections, integrates the console with mapping software. Requires Windows 7 or Windows 10.
Data Distribution Service (DDS)	Provides call management and call data services
Database Maintenance Utility	Supports the installation, maintenance, and repair of the CouchDB database for the (DDS)
Database Schema Installation and Upgrade Utility	Installs and upgrades the DDS databases
EIM	Terminates NG9-1-1 (Next Generation 9-1-1) network voice calls on VESTA 9-1-1
Media Distribution Service (MDS)	Provides telephony services to the system, interfaces with the PSTN , and ACD
Speed Dial Migration Utility	Imports speed dial information into VESTA 9-1-1
System Maintenance Utility	Assists in the upgrade of a VESTA 9-1-1 system.

Supported Vesta Solutions products

Product	Description	Supported features
VESTA® Router 1.0 or later	Network application	Combines legacy selective routing on conventional telephony networks with NG9-1-1 call routing.

Product	Description	Supported features
VESTA® Analytics and VESTA® Analytics Lite 3.3 or later	MIS application	<ul style="list-style-type: none"> ◆ Call and operational data collection ◆ Template and <i>ad hoc</i> reports ◆ Lite option for ten positions or fewer and 100,000 or fewer calls per year
VESTA® Alert 1.2 or later	Map-based application for population warning and mass notification	<ul style="list-style-type: none"> ◆ MassCall service that provides the capability to generate hundreds of thousands of calls per hour ◆ Wireless emergency alerts ◆ Weather and non-weather alerts ◆ Hazmat alerts
VESTA® Map R1 or later and VESTA® Map Local R1	NG911 Geographic Information Service (GIS) mapping for enterprise/geo-diverse customers	<ul style="list-style-type: none"> ◆ Designed for regional and statewide NG911 systems ◆ Data sharing across agencies
VESTA® Locate 3.0 or later	Digital mapping product that uses GIS technology with an emergency response system.	<ul style="list-style-type: none"> ◆ ALI ◆ CAD ◆ Wireline/wireless call location
VESTA® Communicator 5.0 or later	Emergency notifications system	<ul style="list-style-type: none"> ◆ Delivers critical information via phone, pager, fax, email, TTY and SMS text messaging ◆ Transfers notification recipients or inbound callers to a conference bridge, live operator, help desk or other phone lines ◆ Users can modify contacts, prepare messages and assess results, easily managing communications.
VESTA® Real-Time Control R1	An alerting device that displays the status of telecommunicator and call queues.	<ul style="list-style-type: none"> ◆ I/O interface box ◆ Real Time Statistics ◆ Light pole

Product	Description	Supported features
CommandPOST	Temporary call center backup	<ul style="list-style-type: none"> ◆ LAN/WAN connection ◆ ANI/ALI ◆ ACD

Other program and hardware components	Description
Acronis Backup Advanced Disaster Recovery	11.7
Apache CouchDB	1.6.1
AudioCodes Media Gateways	
	MP-11x (FXO/FXS) 6.6
	Mediant 1000 6.6
	Mediant 1000 B 7.2
	Mediant 2000 6.6
BigFix	9.5—Windows 10/ Windows Server 2012 only
CentOS	4.9 (Media Distribution Service (MDS))
	6.5 (ASN)
	7.2 (CFS)
Event Log Monitor	6.7 or later
Fortinet Gateway FortiOS firewall	5.6.3 or later
Genovation KeyPad	MacroMaster CP24/48
HigherGround Instant Recall Recorder (IRR)	51
Lumension Patch Management	8.4 or later
McAfee Anti-Virus	8.8.i patch 8 or later
Microsoft Internet Explorer 11	With Compatibility View off
Mitel IP phones	<ul style="list-style-type: none"> ◆ 6737i—firmware 3.3.1.8234 or later ◆ 6757i—firmware 3.3.1.4368 or later ◆ 6867—firmware 5.0.0.1018 or later
Mitel expansion module	675i
Netcool	4.0.1—Windows 10/ Windows Server 2012 only
Polycom SoundPoint IP phones	<ul style="list-style-type: none"> ◆ 301 ◆ 321/331 ◆ 501/550/601/650/4000 ◆ 6000

Other program and hardware components	Description
PresenTense	<ul style="list-style-type: none"> ◆ Windows 7/Windows Server 2008—4.1 ◆ Windows 10/ Windows Server 2012—5.1
PuTTY	0.65
RealVNC	5.3 or later
SAM firmware	1.0.61
System DISC	5.1.4.0 or later
Time Machine GPS Network	TM1000A
VMware hypervisor	ESxi 6.5 U1—new systems only
VPN client (required for VESTA CommandPOST when Fortinet firewalls are not used)	FortiClient SSL 4.0.2300
WinSCP	5.7.6
WireShark	1.12.8

Third-party DSCP markings

The use of DSCP markings on the DDS Configurator and consoles is restricted to Windows Server 2008 R2 and Windows 7 policy-based QoS. All DSCP marking requests from third-party applications and services are ignored.

Related Links

[Telephony interfaces](#) on page 158

[Telephony configurations](#) on page 158

Hardware specifications

Consoles

Component	Version
Operating Systems	<ul style="list-style-type: none"> ◆ Microsoft Windows 7 Professional SP1 (32-bit) with latest-approved Windows Service Packs ◆ Microsoft Windows 10 Professional (64-bit) with latest-approved Windows Service Packs.
	<div style="display: flex; align-items: center;">  <div> <p>Windows 10 consoles must use the SAM on the system.</p> </div> </div> <p>Note</p>

DDS/MDS/ASN/CFS

[DDS/MDS/ASN/CFS](#) systems can be deployed on virtualized systems, non-virtualized systems, and a combination of both, which determine their system requirements, such as

processing capacity, memory, and storage, in addition to other factors such as sizing. Consult your VESTA 9-1-1 representative for the system requirements suited to your needs.

Hardware	Version
Servers	<p>Model depends on call center system requirements, including call volumes:</p> <ul style="list-style-type: none"> ◆ VESTA 9-1-1 Core—Hewlett-Packard ProLiant DL180g G9 ◆ VESTA 9-1-1 Essentials—Hewlett-Packard ProLiant HP ML350p G9 ◆ VESTA 9-1-1 <ul style="list-style-type: none"> ◆ Hewlett-Packard ProLiant ML110g G9 ◆ Hewlett-Packard ProLiant ML350p G9 ◆ Hewlett-Packard ProLiant DL380p G9

Component	Operating system
Data Distribution Service (DDS)	Windows Server 2012 R2 Standard OEM
Media Distribution Service (MDS)	CentOS 4.9
EIM (installed with DDS)	Windows Server 2012 R2
ASN	CentOS 6.5
Call Filter Service (CFS)	CentOS 7.2

Ethernet switches

Ethernet switches provide network element inter-connectivity and must have the following specifications:

- ◆ Non-blocking switching architecture
- ◆ All ports a minimum of 100 Mbps Full Duplex with at least two 1 Gbps ports
- ◆ VLAN (Virtual Local Area Network)
- ◆ Advanced QoS—802.1p and DSCP based classification, marking, and support a minimum of four queues
- ◆ Rapid Spanning Tree Protocol (RSTP)
- ◆ PoE (Power over Ethernet) for switches that connect IP phones and other PoE-capable devices. PoE is required if the switch needs to supply power to the connected devices.
- ◆ Port mirroring or span ports Link aggregation (802.3ad)
- ◆ Link aggregation (802.3ad)

Display Board for Activity View Display Panel

A wall monitor display board is a large screen can show real-time data from the Activity View Display Panel. Liquid crystal display (LCD) screens (with or without light emitting diodes (LED)) are a better choice than Plasma screens in preventing burn-in or image persistence. However, like all displays that are used over an extended period, the screen can be subject to both of these conditions. The following recommendations can help you avoid burn-in and image persistence and specify the actions you can take when they occur.

To prevent burn-in and image persistence on the screen, follow the general recommendations below in addition to those provided by the manufacturer:

- ◆ Use the display in a well-ventilated area. Exposure to high temperatures speed up image degradation.
- ◆ Use medium-grey shadings states that stay on the screen for long periods. Avoid large differences in brightness.
- ◆ Use the full-screen display. For example, do not use a 4:3 display ratio on a 16:9 screen.
- ◆ Turn off the screen when it is not being used.
- ◆ Check regularly for image retention.
- ◆ If the screen does show signs of burn-in or image retention, you can try the following: Run a screen saver with shifting images for several hours. Turn off the screen for a period between several hours to several days. Run the screen with a bright white for several hours.

Support headsets for Enhanced IP Phones

Headsets can be used with enhanced IP phones. Vesta Solutions does not provide, sell, or recommend a specific type of headphone product.

Full deployment system capacities

System features	Capacity
Positions (consoles and IP phones)	250
Voice lines (emergency and admin)	750
ACD queues	200
ACD telecommunicator maximums	Capacity
Maximum number of logged on telecommunicators in a ring-one queue (longest-idle, circular, linear)	80
Maximum number of active/logged on telecommunicators in a ring-all queue	16
Maximum number of configured telecommunicators for an ACD queue	1200
Calls	Capacity
Voice calls per year	3,000,000
Voice calls per hour sustained for five days	1200
Voice calls per hour sustained for 24 hours	1800
Voice calls peak hour	2400
Concurrent text calls per system	250
Concurrent ESInet voice calls	750 minus number of PSTN lines
Concurrent EIM voice calls	300

Auto attendant capacities	Capacity
Configured auto attendants	150
Queue announcements (ACD, Voice Mail, Auto Attendant)	170
Concurrent calls	200
Auto attendant groups per system	50
Extensions up to 10 levels	400
Users	Capacity
VESTA 9-1-1 telecommunicators	2000
Registered ACD telecommunicators	2000
Agency	Capacity
System maximum	100
Maximum number of roles on a system	500
Group	Capacity
Emergency lines	100
Administrative lines	100
ALI Groups	Equals number of available COM ports
Auto attendant	50
CAD	100
Dedicated Data	100
Dial Out Data	100
Direct Access Administrative	100
Enhanced Phone	100
Phone	100
XSLT Transformation	50
Profiles	Capacity
Automated Abandoned Callback	50
ALI Discrepancy	100
CDR	100
Pocket Dial Filter	50
Queue Selector	200
SAM	100

Ports	Capacity
CAD	200
Dial Out Data	100

Pocket Dial Filter specifications

Capacities

Call traffic type	Capacity
Maximum concurrent calls per CFS	200 calls 2 servers X 200 = 400 calls
Peak call traffic per hour	1920 calls
Normal call traffic per hour for 24 hours	1440 calls
Stability for call traffic per hour over 120 hours	960 calls

Configuration maximums

Configurations	Maximum
Number of Pocket Dial Profiles	50
Number of Voice Prompts	106
Voice (VOX) detection period	30 seconds (Default: 3 seconds)

Automated Abandoned Callback specifications

The performance of calls being filtered by the AAC should be considered to be a subset of the existing performance criteria and does not increase the capacity of the system.

Call traffic type	Capacity
Concurrent calls per system	50 calls (one per agency)
Peak call traffic per hour for 1 hour	240 calls
Normal call traffic per hour for 24 hours	180 calls
Stability for call traffic per hour over 120 hours	120 calls



Note

All figures are based on a 10% abandoned call rate. Standard industry abandoned call rate 3-8%.

Queue Selector specifications

Call traffic type	Capacity
Peak call traffic per hour for 1 hour	2400 calls
Normal call traffic per hour for 24 hours	1800 calls
Stability for call traffic per hour over 120 hours	1200 calls

Voice prompt specifications

The following voice prompt specifications apply to the Pocket Dial Filter, Automated Abandoned Callback, and Queue Selector features.

Voice prompt specifications	Description
Voice prompt file name	Name without spaces with a .wav extension. The file name uses alphanumeric characters: A-Z, a-z, 0-9, accepting the underscore (_), dash (-), and dot (.). Maximum length is 32 alphanumeric characters
WAV file specification	8khz / 16 bit PCM samples signed, little-endian 1 channel (mono)
Sound file length maximum	5 minutes
Nominal level	-21.5 dBfs

Enhanced Data Requests

Enhanced Data requests respond within 100ms with the following call rates:

Call traffic type	Maximum
Peak call traffic per hour for 1 hour	2400 calls per hour
Normal call traffic for 24 hours	1800 call per hour
Stability for call traffic over 120 hour	1200 calls per hour



Note

By default, each API key is restricted to 1000 requests per minute, which meets peak traffic requirements.

Audio

Logging recorder

For logging recorders, different options are available to record the station and/or the trunk using two methods:

- ◆ Voice Operated Exchange (VOX) — Recorder starts and stops recording based on presence or absence of voice.
- ◆ Dry contact closure — Recorder starts and stops recording based on presence or absence of a contact closure.
- ◆ DC voltage trigger — Recorder starts and stops recording based on the detection of a voltage change.

ACD announcements

User-supplied [ACD](#) announcements can be uploaded by local systems administrators. The required format for uploaded announcement files is mono mode, at an 8kHz sample rate. The files are stored in a 16-bit PCM wave format.

VESTA 9-1-1 Core/VESTA 9-1-1 Essentials capacities

The following table lists the system capacities for a single or redundant server hardware on a small single site.

System feature	Capacity
Positions (consoles and phones)	<ul style="list-style-type: none"> ◆ 10 positions (VESTA Essentials) ◆ 5 positions (VESTA Core)
Voice lines (emergency and admin)	30
Gateways (including EIM)	8
Calls	Capacity
Voice calls per year	<ul style="list-style-type: none"> ◆ 100,000 (VESTA Core/ VESTA Essentials small server configuration) ◆ 500,000 (VESTA Essentials medium server configuration with same number of lines/trunks as full a VESTA 9-1-1 system.)
Voice calls per hour sustained for five days	40
Voice calls per hour sustained for 24 hours	60
Voice calls sustained for one hour	100

Time synchronization

To ensure the consistency of time stamps on event records and reports, the system synchronizes its internal clocks to a master clock in a call center. The call center master clock is traceable to Coordinated Universal Time (UTC) with continuous accuracy of 0.1 seconds relative to the UTC time source. If the master clock becomes unlocked from the external UTC source and must “free run”, the error accumulation does not exceed more than one second per day. Time codes can be provided via an RS-232 serial IRIG (Inter Range Instrumentation Group) or an Ethernet 10/100 Base-T interface. The system uses the Ethernet 10/100 Base-T interface with Network Time Protocol (NTP) v4.

The following time server models are recommended.

NetClock time server

Spectracom’s NetClock Model 9483 is ideally suited for delivering worldwide, split-second timing to mission critical systems. Model 9483 can track up to twelve GPS satellites simultaneously, providing highly accurate timing by synchronizing to the satellites’ atomic clocks. A minimum of one unit per host site is highly recommended.

Ethernet time server

Spectracom’s Ethernet Time Server Model 9388 is suited for sharing accurate time from a Master Clock throughout the network. When the Model 9388 is synchronized to a NetClock 9483 via RS-485, you can operate a Stratum 1 time server on a separate LAN segment without the expense of a second GPS receiver. The system running on a separate LAN segment could be the main system or another call center sub-system such as [CAD](#) or Radio.

Network time synchronization software

DDS and consoles synchronize to the Master Clock via the Presentense Time Client software that replaces the minimal Windows W32Time utility. Shorter time sync intervals for timing accuracy and support for redundant time sources are provided in the software package.

QoS

[Quality of Service \(QoS\)](#) tagging is implemented in the system components. The following network parameters must be observed for the best quality:

- ◆ End-to-end delay—100 ms or less
- ◆ End-to-end jitter—30 ms or less
- ◆ Packet loss—less than 1%



Note

The use of [Differentiated Services Code Point \(DSCP\)](#) markings on the DDS servers and consoles is restricted to Windows Server 2012 R2 and Windows 10 policy-based QoS. All DSCP marking requests from third-party applications and services are ignored.

Location information

Location information protocol information elements

ALI protocols on an RS-232 connection enable the DDS server to query location information from the location server, maintain and monitor the connection to the database, and start and end transmission.

Each information element of a protocol is presented by using:

- ◆ One U for each unused byte in a protocol element
- ◆ ASCII control characters STX (02h), CR (0Dh), EOT (04h) and ETX (03h) for message framing
- ◆ The | character for a choice of one of the elements in the set bounded by { } braces, as in { X | Y | Z }
- ◆ underlined text for a live-link within this topic
- ◆ < > for encompassing each information element

ALI protocol information elements	Description
ACK	(06h) Acknowledge
AT	One byte [#] ALI Type returned by the ALI provider <ul style="list-style-type: none"> ◆ (042h) ALI is coming from the Bell BCRIC service ◆ (043h) ALI is coming from the Bell COIN database ◆ (020h) for message types that do not contain ALI
CHECK	One byte [#] message integrity verification character
CR	[0Dh] indicating the end of the ALI Request
ETX	End of text (03h)
H	(048h) Heartbeat
I	One byte [#] Information digit used by the ALI provider to determine the caller area code <ul style="list-style-type: none"> ◆ (030h) area code 1 ◆ (031h) area code 2 ◆ (032h) area code 3 ◆ (033h) area code 4 ◆ (034h) area code 1 with flashing display ◆ (035h) area code 2 with flashing display ◆ (036h) area code 3 with flashing display ◆ (037h) area code 4 with flashing display ◆ (038h) Test call ◆ (039h) Unknown area code

ALI protocol information elements	Description
MT	<p>One byte [#] assigned by the ALI provider that indicates the type of message returned from the ALI database</p> <ul style="list-style-type: none"> ◆ (031h) Message with service address ◆ (032h) Message without address due to non-existent <numbering plan area (NPA)><NXX> in database ◆ (033h) Message without address due to non-existent <TN> in database ◆ (034h) Message with service address plus ESN and X-Y information ◆ (035h) Message with an ANI of 000-911-0000 ◆ (036h) Message with service address plus carrier company information ◆ (037h) Message with service address plus LSP/WSP ID, Data LSP/WSP TN, province and error flag ◆ (038h) Message with ESCO<NPA>-911-0<TRK>
NAK	(015h) Negative Acknowledge
NPA	Three bytes [###] assigned by the tandem office that the ALI database uses to identify the caller's area code
NPD	One byte [#] assigned by the tandem office that the ALI database uses to identify the caller's area code
NXX	Three bytes [###] assigned by the tandem office that identifies the caller's local exchange
POS	Two bytes [##] that are a system-assigned VESTA ID of the answering position For requests that occur prior to answering a call, it is desirable that this value be 00. For requests that occur after answering a call (including Repeat, Manual and Test ALI requests), it is desirable that this value be the number of the position associated with the request.
RT	A single byte [#] that flags the ALI Request as either an automatic ALI Request (41h, A) or a manual ALI Request (4Dh, M)
SEQ	A two-byte sequential counter [##] ranging from 00 to 99 that is used to co-relate the ALI Request to the ALI Text.
STX	Start of text, (02h)
TEXT	ALI data formatted by the ALI provider, up to 800 ASCII characters
TN	Four bytes [####] assigned by the tandem or end office that identify the caller's Directory number

ALI protocol information elements	Description
TRK	<p>The two least significant bytes [##] of the system-assigned trunk number on which the call was received. Range 00 to 94 (decimal) for automatic lookup and 95 to 99 (decimal) for special lookups. In order that ALI data-bases be able to report accurate call accounting, it is desirable that special lookups use the following trunk numbers:</p> <ul style="list-style-type: none"> ◆ 97 = Repeat ALI (used for ALI requests subsequent to answering an emergency call) ◆ 98 = Manual ALI (used when the operator requests ALI based on a manually entered ANI, not necessarily related to a received call) ◆ 99 = Test ALI (used for verification of operational ALI system, typically using a predefined ANI). This shall not be a result of receiving a Test call on an emergency trunk.
TYPE	<p>One digit [#] message type assigned by the ALI provider</p> <ul style="list-style-type: none"> ◆ (031h) Data retrieved. Only one link progressional. ◆ (032h) Data retrieved. Both links progressional. ◆ (033h) Broadcast message from ALI database. May include text. ◆ (035h) Broadcast message from ALI database. Host going out of service. ◆ (039h) No address information found. TEXT information element is NPA-NXX-TN No Record Found.
U	An unused byte in a protocol element
XOFF	(013h) Suspend transmission
XON	(011h) Resume transmission

ALI flow control protocol messages	Description
Heartbeat	<H> <CR>
Acknowledgement	<ACK> or <STX> <ACK> <ETX>
Negative Acknowledgement	<NAK> or <STX> <NAK> <ETX>
Suspend Transmission	<XOFF>
Resume Transmission	<XON>

ALI protocol descriptions	Description
10 digits with PSAP and TRK ID (NENA)	
ALI Request	<NPA> <NXX> <TN> <POS> <TRK> <CHECK> <CR>
ALI Text	<STX> <TYPE> <POS> <TEXT> <ETX>
Timing Protocol	See General ALI message timing .

ALI protocol descriptions	Description
10 Digits TRK ID (GTE)	
ALI Request	<RT> <NPA> <NXX> <TN> <TRK> <UU> <CHECK> <CR>
ALI Text	<STX> <U> <TRK> <CR> <TEXT> <ETX>
Timing Protocol	See General ALI message timing .
10 Digits SEQ ID (GTE)	
ALI Request	<RT> <NPA> <NXX> <TN> <SEQ> <UU> <CHECK> <CR>
ALI Text.	<STX> <U> <SEQ> <CR> <TEXT> <ETX>
Message Timing Protocol	See General ALI message timing
8 Digits with PSAP and SEQ ID (Ameritech)	
ALI Request	< I > <NXX> <TN> <POS> <SEQ> <CHECK> <CR>
ALI Text	<STX> <U> <POS> <TEXT> <ETX>
Message Timing Protocol	See General ALI message timing .
8 Digits with PSAP and SEQ ID (Rockwell)	
ALI Request	< I > <NXX> <TN> <POS> <SEQ> <CHECK> <CR>
ALI Text	<STX> <U> <POS> <CR> <TEXT> <ETX>
Message Timing Protocol	See General ALI message timing .
8 Digits with SEQ ID (DMS)	
ALI Request	< I > <NXX> <TN> <SEQ> <UU> <CHECK> <CR>
ALI Text	<STX> <U> <SEQ> <CR> <TEXT> <ETX>
Message Timing Protocol	See General ALI message timing .
8 Digits with PSAP and TRK ID (ATnT)	
ALI Request	< I > <NXX> <TN> <POS> <TRK> <CHECK> <CR>
ALI Text	<STX> <U> <POS> <CR> <TEXT> <ETX>
Message Timing Protocol	See General ALI message timing .
10/20 Digits TRK ID (BELL)	
ALI Request	10 digits — <NPA> <NXX> <TN> <TRK> <CHECK> <CR>

ALI protocol descriptions	Description
	20 digits — <NPA1> <NXX1> <TN1> <NPA2> <NXX2> <TN2> <TRK> <CHECK> <CR>
ALI Text	<MT> <NPA> <NXX> <TN> <TRK> <AT> <TEXT> <CHECK> <CR>
Message Timing Protocol	See 10/20 digits TRK ID (Bell) message timing .

General ALI message timing

ALI message timing is based on Heartbeat messages and ALI Request messages to the ALI database.

Heartbeat message to the ALI database

The DDS server sends a heartbeat message to the ALI database on each operational link once a minute during idle time to verify link integrity. The ALI database responds with an Acknowledgement message within two seconds to confirm that the link is operational. If the ALI database does not respond within two seconds or responds with a Negative Acknowledgement, the following sequence of events occurs:

- ◆ DDS retries twice.
- ◆ If the DDS server does not receive an Acknowledgement message after the two retries, the DDS server stops sending new requests on that link, declares a link failure, and posts an alarm.
- ◆ Next, the DDS server issues a Heartbeat message every two seconds until an Acknowledgement message is returned by the ALI database.
- ◆ On receipt of the Acknowledgement message, the DDS server declares the link operational again and returns that link to service.
- ◆ A message is posted to the Activity View Diagnostic log. The system administrator must clear the alarm manually.

ALI Request message to the ALI database

The DDS sends an ALI Request message to the ALI database and expects a response within two seconds. The ALI database responds with an Acknowledgement message followed by the ALI Text message.

- ◆ If the ALI database does not respond with an Acknowledgement message within two seconds, the DDS follows the protocol from *Heartbeat message to the ALI database*.
- ◆ If the ALI database responds with an Acknowledgement message and the DDS does not receive the ALI Text message within 20 seconds, the DDS assumes the call has no ALI information.
- ◆ For a manual ALI Request the DDS waits 30 seconds for the ALI Text message before timing out and posting the message No ALI information found for call to the **Call Information Display** window.

10 digits with TRK ID (Bell) message timing

ALI message timing is based on Heartbeat messages and ALI Request messages to the ALI database.

Heartbeat message to the ALI database

The DDS sends a Heartbeat message to the ALI database on each operational link once a minute during idle time to verify link integrity. The ALI database responds with an Acknowledgement message within two seconds to confirm that the link is operational. If the ALI database does not respond within two seconds or responds with a Negative Acknowledgement, the following sequence of events occurs:

- ◆ The DDS retries the Heartbeat message twice.
- ◆ If DDS does not receive an Acknowledgement message after the two attempts, the DDS stops sending new requests on that link, declares a link failure, and posts an alarm.
- ◆ Next, the DDS issues a Heartbeat message every two seconds until an Acknowledgement message is returned by the ALI database.
- ◆ On receipt of the Acknowledgement message, the DDS declares the link operational again and returns that link to service.
- ◆ A message is posted to the Activity View Diagnostic log. The system administrator must clear the alarm manually.

ALI Request message to the ALI database

The DDS sends an ALI Request message to the Bell ALI database. The Bell protocol does not return an Acknowledgement message. Instead, the Bell ALI database responds immediately with the ALI Text message.

- ◆ If the Bell ALI database can not identify the ALI Request, it sends a Negative Acknowledgement back to the DDS.
- ◆ If the ALI database does not respond within two seconds, the DDS follows the error protocol described above.
- ◆ If the ALI database responds with an Acknowledgement message and the DDS does not receive the ALI Text message within 20 seconds, the DDS assumes the call has no ALI information.
- ◆ For a manual ALI Request the DDS waits 30 seconds for the ALI Text message before timing out and posting the message No ALI information found for call to the Call Information Display window.

CAD RS-232 protocols

CAD services

The following [CAD](#) configurations are supported:

- ◆ End of Line mode (None, CR, LF, Both)
- ◆ Form feed mode (None, Before, After, Both)
- ◆ Baud rate (1200, 2400, 4800, 7200, 9600, 14400, 19200, 38400, 57600, 115200)
- ◆ Data Bits (7, 8) Parity (None, Even, Odd, Mark, Space) Stop Bits (1, 1.5, 2)
- ◆ Parity (None, Even, Odd, Mark, Space)
- ◆ Redundant links to a single-link on a CAD Server using an RTS assertion to determine the readiness of the serial interface
- ◆ Server using an RTS assertion to determine the readiness of the serial interface
- ◆ CAD handshake flag

CAD protocol

CAD protocol information elements	Description
ACK	(06h) Acknowledge
ANIN	ANI Indication, an 11-byte field filled with the ANI for the call. If there are errors in the ANI then the ANIN information elements contains either <ul style="list-style-type: none"> ◆ "ANI FAILURE" ◆ The parsed digits up to the failure point; for example 91855. ◆ "PARTY LINE" if the call is coming from a shared CO line
BCC	Binary Check Character
CHECK	One byte [#] message integrity verification character
EOT (04h)	End of Transmission
ESN	A four-digit emergency service number
ETIME	A 12-byte numeric time stamp indicating the telecommunicator off-hook time for the call The form of the timestamp is <YY> <MM> <DD> <HH> <MM> <SS>
ETX	(03h) End of Text
H	(048h) Heartbeat
NAK	(015h) Negative Acknowledge
POS	Two bytes [##] that are either <ul style="list-style-type: none"> ◆ a system-assigned system ID of the answering position ◆ a user-programmable value greater than zero that is configured in the CAD Header Index field <p>For requests that occur prior to answering a call, it is desirable that this value be 00. For requests that occur after answering a call (including Repeat, Manual and Test ALI requests), it is desirable that this value be the number of the position associated with the request.</p>
PSAPID	One byte [#] index of the Phone Group to which the answering position belongs.
SEQ	A two-byte sequential counter [##] ranging from 00 to 99 that is used to co-relate the ALI Request to the ALI Text
STX	(02h) Start of Text
TEXT	ALI data formatted by the location information provider, up to 800 alpha-numeric bytes
TNUM	Four bytes [####] containing the trunk number of the incoming call
TTY-TEXT	The transcript of the TTY message exchange between the emergency caller and the telecommunicator

CAD protocol information elements	Description
TYPE	One digit [#] message type assigned by the ALI provider <ul style="list-style-type: none"> ◆ (031h) Data retrieved. Only one link operational. ◆ (032h) Data retrieved. Both links operational. ◆ (033h) Broadcast message from ALI database. May include text. ◆ (035h) Broadcast message from ALI database. Host going out of service. ◆ (039h) No address information found. TEXT information element is NPA-NXX-TN No Record Found.
U	An unused byte in a protocol element
XOFF	(013h) Suspend transmission
XON	(011h) Resume transmission

CAD RS-232C protocol	Description
NENA	<STX> <TYPE> <POS> <TEXT> <ETX> <BCC>
NENA with TTY	<STX><TYPE><POS><SEQ><TTY-TEXT><ETX><CHECK>
NENA PLANTCML BCC	<STX> <U> <PSAPID> <POS> <ESN> <TNUM> <ETIME> <ANIN> <TEXT> <ETX> <BCC> <EOT>
PLANTCML	<STX> <U> <PSAPID> <POS> <ESN> <TNUM> <ETIME> <ANIN> <TEXT> <ETX>
PSAP_ID with BCC	<STX> <U> <PSAPID> <POS> <TEXT> <ETX> <BCC> <EOT>
PSAP_ID	<STX> <U> <PSAPID> <POS> <TEXT> <ETX>
PSAP_ID_ESN BCC	<STX> <U> <PSAPID> <POS> <ESN> <TEXT> <ETX> <BCC> <EOT>
PSAP_ID_ESN	<STX> <U> <PSAPID> <POS> <ESN> <TEXT> <ETX>
AT&T	<STX> <TYPE> <POS> <TEXT> <ETX> <BCC>

CAD RSC-232C flow control protocol message	Description
Heartbeat	<STX><H><ETX><STX><H> <ETX> <BCC> <EOT>
Acknowledgement	<STX> <ACK> <ETX> <STX> <ACK> <ETX> <BCC> <EOT>

CAD RSC-232C flow control protocol message	Description
Negative Acknowledgement	<STX> <NAK> <ETX> <STX> <NAK> <ETX> <BCC> <EOT>
Suspend Transmission	<STX> <XOFF> <ETX> <STX> <XOFF> <ETX> <BCC> <EOT>
Resume Transmission	<STX> <XON> <ETX> <STX> <XON> <ETX> <BCC> <EOT>

CAD message timing protocol – with handshake

For each message that is transmitted to the CAD computer, the CAD computer responds with an ACK if the message is valid (the BCC is correct), or with a NAK if the message is invalid (the BCC is not correct).

The response from the CAD computer must be received by the [CTI Console Service \(CCS\)](#) within two seconds. If the CCS does not receive the response from the CAD within two seconds, the following sequence of events occurs:

- ◆ The CCS retries twice.
- ◆ If no response is received after the second retry, the CCS stops sending new requests on that link, declares a link failure, and posts an alarm.
- ◆ The CCS then issues a Heartbeat message every two seconds until an ACK message is returned by the CAD computer.
- ◆ On receipt of the ACK message, the CCS declares the link operational again and returns that link to service.
- ◆ A message is posted to the Activity View Diagnostic log. The system administrator must clear the alarm manually.

CAD message timing protocol – without handshake

Protocol messages are transmitted to the CAD computer with a delay of two seconds or more between successive message transmissions. No response is expected from the CAD computer.

Page intentionally left blank

VESTA 9-1-1 vs VESTA Terminology



List of topics

- ◆ [VESTA 9-1-1 Terminology](#)

VESTA 9-1-1 Terminology

The following table lists the terms used in VESTA 9-1-1 and their equivalents.

VESTA 9-1-1	Obsolete in VESTA 9-1-1
Activity View	Queue Display
Activity View's Display Panel	Queue Display module
Agents window	Similar to the classic Intercom (list) and supports more columns making it equivalent to a subset of VESTA-View features.
ALI Groups	There is no pre-VESTA 9-1-1 equivalent.
Call Information Display window	ALI Display (module)
Console	Workstation
Contact	Dial entry
Contact Manager	Auto Dial Maintenance
Contact Search window	Search
Custom Field	Supplemental Dial Entry Information (or user-defined field)
Custom Context	User-defined context
Customized containers	Modules
DDS Configurator/ALI Profiles	PlantCML Management Console (PMC)
DDS Configurator/ALI Sources	App Manager (formerly known as PMC)
DDS Configurator manages the CDR printer	VESTA Management Console
Dial Directory	Auto Dial
Emergency Callback	ANI Callback
Expander (on Call Appearances)	Auto Dial List Button
Extraction	Parsing
Dial Directory and Dial Pad	Auto Dial
Greetings Manager (tool)	Pre-Recorded Greetings (module)
Group buttons in Dial Directory	Auto Dial List Button
IRR software application	IRR module
Monitor (Talking, Listening)	Observe, Barge In
Recent Calls window	Similar to the classic <ul style="list-style-type: none"> ◆ Auto Dial ANI Callback (list) ◆ Auto Dial Manual Dial Box drop-down (list) ◆ Last Number Dialed (field)

VESTA 9-1-1	Obsolete in VESTA 9-1-1
Response Card	ALI Parser Maint
Roles	User levels and groups
Update button in Call Information Display	Retransmit

There is no VESTA 9-1-1 equivalent to the following terms from versions of VESTA earlier than VESTA/Sentinel 4:

- ◆ ALI Fax
- ◆ ALI Groups
- ◆ ALI Page
- ◆ CDR Output Device Manager
- ◆ CDR Recovery utility
- ◆ Forward button
- ◆ Module updates
- ◆ Satellite Data
- ◆ Standalone mode
- ◆ User name of “Greeting”
- ◆ VESTA Management Console
- ◆ VESTA Server Database Replication (utility)

Page intentionally left blank

Glossary

A

AAC (Automated Abandoned Callback)

A VESTA 9-1-1 feature that automatically dials back an abandoned call to ascertain whether that call is a valid emergency or had been unintentionally placed—for example, a call that had been placed from a cell phone that was carried in a pocket (known as a *pocket dial*) or a call that was placed by a child who had been playing with a phone.

If the call is deemed to be valid, the caller can be placed in a queue that is routed to a PSAP telecommunicator.

ACD (automatic call distribution)

The process in which an incoming call is distributed to a group of telecommunicators according to a pre-programmed queueing priority mechanism. A typical ACD system can retrieve call-related data from a remote database service and then transfer the call and call-related data to the first-available agent.

The equipment that delivers an ACD service is sometimes referred to as an *automatic call distributor*.

ADR (Additional Data Repository)

A data storage facility containing supplemental information about an emergency call, the caller, and location information about the caller. Additional data is not necessary to respond to a 9-1-1, but it can provide important details about the call (for example, the service provider), the caller (for example, medical information), and location (for example, floor plans).

The additional data is usually retrieved by a URL reference.

ALI (automatic location information)

A call center system capture of a telephone number, street address, name, and other information that is associated with an emergency caller. The ALI can also supply an emergency service number (ESN), the x and y coordinates, and other information that is associated with a caller's location. Some private call centers refer to ALI as simply *location information*.

A set of ALI records that reside on a computer system are said to be held in an ALI database or ALI computer.

Also known as *automatic location identification*.

ANI (automatic number identification)

The telephone system service that provides a calling party's telephone number. Also known as a calling number or calling party number (CPN), it is the telephone number that is associated with the access line from which a call originates.

API (application programming interface)

A set of routines, data structures, object classes, and protocols that are provided by libraries or operating system services, or both, in order to support the building of applications.

An API is largely abstract; that is, it specifies an interface and controls the behavior of objects that are specified in the interface.

ASCII (American Standard Code for Information Interchange)

A seven-bit character code that is used by computers to represent text and symbols.

This standard defines the code for a character set that is used for information interchange between equipment of different manufacturers, and is a standard for data communications over telephone lines. In the context of telecommunications device for the deaf (TDD) and teletypewriter (TTY), this refers to both a binary code and modulation method used for 110 and 300 baud, TDD and TTY communications (according to EIA PN-1663).

ASN (Advanced Services Node)

A server-based program module that supports call-taking services that are related to Next Generation 9-1-1 (NG9-1-1) functionality.

The ASN supports the following functionality:

- ◆ Interfacing with text call center (TCC) vendors to receive emergency text calls
- ◆ Outbound text calling
- ◆ Policy routing of emergency text calls
- ◆ Next-generation location services for emergency text calls
- ◆ Text-call transfers
- ◆ Emergency text-call, idle timers
- ◆ Emergency text-call, abandoned call handling
- ◆ Real-time statistics that deliver call and ACD queue information to the Queue Display window and the Heads-Up Display

C

CAD (computer-aided dispatch)

A computer-assisted dispatching service for emergency vehicles such as police cars, ambulances, and fire trucks. The ANI and ALI information that pertains to an emergency is often fed directly into the CAD system and is sometimes referred to as a CAD *spill*.

CAMA trunk (Centralized Automatic Message Accounting trunk)

A protocol that carries billing information to a service provider's billing computer by using inband, multi-frequency signaling (MF signaling). The billing record includes the telephone number of the party that initiated the call, the start and end time of the call, and the destination of the call.

In 9-1-1 systems, a CAMA trunk passes two eight-digit numbers to the call center: one eight-digit number identifies the source (calling party); the other eight-digit number identifies the destination (called party). The information is used at a call center to establish the automatic location information (ALI) for an incoming call.

CCDB (Centralized Configurator Database)

A database that stores, manages, and distributes a console layout, greeting file, and volume settings. The CCDB also stores contact lists.

The CCDB runs as a service on the Data Distribution Service (DDS).

CCS (CTI Console Service)

A console-based service that supports voice communications between the console and the back-end system.

CDR (call detail record)

A call event log that records the chronological and operational parameters for each call that is processed.

A CDR usually contains a caller's telephone number, the time that the telephone equipment initially established a connection, the time that the call was answered, the time that the call was transferred (if applicable), the time that the call was disconnected, the trunk line that was used, and the identity of the answering position that handled the call.

Also known as station message detail recording (SMDR).

CFS (Call Filter Service)

A redundant server pair (CFS A and CFS B) that hosts the Pocket Dial Filter, the Automated Abandoned Callback (AAC), and Queue Selector features. The servers are configured in DDS Configurator to implement customized WAV file prompts, filtering, and callback behavior. The CFS is installed on its own virtualized machine.

The CFS servers operate with calls alternating between both servers. If one of the servers fails, the second operates the features on its own.

CID (call information display)

A console module that automatically displays a caller's telephone number, location, and supplementary emergency-services information.

CPE (customer-premises equipment)

The telephone-control equipment that is owned by a customer and is located at a customer site, as opposed to being located at a central office (CO).

Examples include telephones, digital subscriber line (DSL) modems or cable modems, or purchased set-top boxes for use with communications service-provider services. Also included are key telephone systems and most private branch exchanges (PBXes).

Also known as *customer-provided equipment* and (in Europe) *connected telecommunications equipment*.

CPN (calling party number)

In NENA, a callback number that is associated with a wireless telephone. The CPN can also be a mobile directory number (MDN), mobile identified number (MIN), a temporary callback number, or a tracking ID number, and may not support callback in all cases.

In VESTA 9-1-1, CPN is the telephone number of a caller. Because the telephone number of a caller can be communicated by using several different protocols, such as caller ID, automatic number identification (ANI), and the CPN field in an integrated services digital network (ISDN) message, CPN is often used to describe the caller's telephone number without any unnecessary details. In this sense, CPN is the root term from which specific forms can be derived (for example, ANI is a specialized form of CPN).

D

DAAL (direct-access administration line)

An outgoing line that is used on a console for administrative calls. Selecting a DAAL automatically seizes an outgoing line that is mapped to a shared call appearance (SCA) on which a telecommunicator can dial a call, either manually or from any other method that is available on the console. A DAAL can receive incoming calls, including calls that are routed through an automatic call distribution (ACD) queue. An administrator can organize DAALs in groups to specify a line selection scheme in the order of the assigned extension numbers.

DDS (Data Distribution Service)

A redundant server that provides advanced 9-1-1 call-handling and call-management services to critical call-management centers.

DHCP (dynamic host control protocol)

A protocol that provides the following IP address allocation schemes:

- ◆ Manual allocation: the DHCP server performs the allocation based on a table with media access control (MAC) addresses—Internet Protocol (IP) address pairs that are manually filled by the server administrator. Only requesting clients with a MAC address that is listed in this table can receive the IP address that is associated with the table.
- ◆ Automatic allocation: the DHCP server permanently assigns a free IP address to a requesting client from a range that is provided by the administrator.
- ◆ Dynamic allocation: the DHCP server provides dynamic re-use of IP addresses. A network administrator assigns a range of IP addresses to DHCP and each client computer on the local area network (LAN) has its Transmission Control Protocol over Internet Protocol (TCP/IP) software configured to request an IP address from the DHCP server when that client computer's network interface card starts. The request-and-grant process uses a lease concept with a controllable time period. This process eases the network installation procedure on the client computer side.

Some DHCP servers can update the domain name system (DNS) that is associated with a client host to reflect the new IP address.

DNS (domain name system)

A server that translates an IP address into a domain name and a domain name into an IP address.

DPI (Direct PSAP Interconnect)

A feature that allows two or more VESTA 9-1-1 consoles from different public safety answering positions (PSAPs) to interact through a transfer or conference call.

DSCP (Differentiated Services Code Point)

A field in an IP packet that enables different levels of service to be assigned to network traffic by marking each packet on the network with a code and appropriating the corresponding level of service to it.

DTMF (dual-tone multi-frequency)

A telephone signaling protocol that uses the voice frequency band for signaling between a handset and connected private branch exchange (PBX), or end-office. DTMF is used to dial a telephone number and to interact with voice-mail systems.

DTMF is known as push-button or touch-tone dialing. It uses four low-frequency and four high-frequency audio tones.

E

E9-1-1 (Enhanced 9-1-1)

An emergency telephone number service that provides a 9-1-1 tandem switch with the ability to selectively route an emergency call to the correct primary public safety answering point (PSAP) that serves the originating endpoint location.

An emergency telephone number service becomes an E9-1-1 emergency service when there is a minimum of two features added to it. E9-1-1 provides automatic location information (ALI) and automatic number information (ANI) to an answering position.

ECRF (Emergency Call Routing Function)

A functional element in an Emergency Services Internet Protocol Network (ESInet) which is a Location-to-Service Translation (LoST) protocol server where location information (either civic address or geo-coordinates) and a service uniform resource name (URN) serve as input to a mapping function that returns a uniform resource identifier (URI), which is used to route an emergency call toward the appropriate public safety answering point (PSAP) for the caller's location or towards a responder agency.

EIM (ESInet Interface Module)

A Vesta Solutions feature that processes session initiation protocol (SIP) extensions. The EIM extracts Next Generation 9-1-1 (NG9-1-1) data that is received from the Emergency Services Internet Protocol Network (ESInet) and sends only generic SIP messages to the private branch exchange (PBX).

EMS (emergency medical service)

A response center that offers ambulance service and poison-control information services.

ESInet (Emergency Services IP Network)

A managed Internet Protocol (IP) network that is used for emergency services communications and can be shared by any public safety agency. ESInet provides the IP transport infrastructure upon which independent application platforms and core services can be deployed, including, but not restricted to, those necessary for providing Next Generation 9-1-1 (NG9-1-1) services.

An ESInet can be constructed from a mix of dedicated and shared facilities. An ESInet can also be interconnected at local, regional, state, federal, national, and international levels to form an IP-based inter-network (a network of networks).

The term ESInet designates the network but not the services that ride on the network.

ESN (emergency service number)

A three-digit to five-digit number that represents a unique combination of emergency service agencies (law enforcement, fire, and emergency medical service) that are designated to serve a particular emergency service zone (ESZ).

F

FQDN (fully qualified domain name)

The complete domain name for a specific computer, or host, on the Internet. The FQDN consists of two parts: the host name and the domain name. For example, an FQDN for a hypothetical mail server may be *mymail.somecompany.com*. The host name is *mymail* and the host is located within the domain *somecompany.com*.

Also known as an *absolute domain name*.

FXO (foreign exchange office)

A telephony trunk interface that receives plain old telephone service (POTS). POTS generates the on-hook and off-hook indicators that signal a loop closure at the FXO end of a circuit. A standard analog telephone is such a device. FXO must be connected to a foreign exchange station (FXS) interface. The FXS interface delivers the familiar dial tone and ring tone to the FXO and also supplies the power to the FXO device.

FXS (foreign exchange station)

A telephony trunk interface that provides battery power, sends dial tone, and generates ringing voltage. A standard telephone set plugs into such an interface to receive telephone service.

Also known as *foreign exchange service*, in which a telephone line is switched in a central office (CO) that is not the local central switching office where the telephone is located.

H

HA (high availability)

A framework for providing features to ensure the availability of services and applications in a multi-server or single-server environment. These features include automatic restart for an application that has stopped responding; automatic failover to a standby instance when an application fails, or must be shut down for maintenance; and delivery of critical information and state from one instance of an application to its standby instance, which in turn allows the standby instance to immediately assume responsibility when the active instance fails.

HASP (Hardware Against Software Piracy)

A proprietary, hardware-based, cross-platform software copy protection system that plugs into a standard parallel port or into a Universal Serial Bus (USB) port.

Also known as a *security dongle*.

HTTPS (Hypertext Transfer Protocol Secure)

A combination of Hypertext Transfer Protocol (HTTP) with a Secure Sockets Layer and Transport Layer Security (SSL/TLS) protocol that provides encrypted communication and

secure identification of a network World Wide Web (Web) server. HTTPS connections are often used for payment transactions on the Web and for sensitive transactions in corporate information systems.

HTTPS must not be confused with the seldom-used Secure HTTP (S-HTTP).

G

GIS (geographic information system)

A computer application that stores and manipulates electronic maps and related data. GIS can be used in an emergency notification system (ENS) to display the coordinates of an incoming emergency call.

A GIS can translate a street address into a location on a map. It can also match pertinent information, such as the owner of the house, that is displayed on a map.

Globally Unique Identifier (GUID)

The call identifier assigned by the first element in the first ESInet which handles a call. Call identifiers are globally unique.

I

i3

The *i* term is the abbreviation used by the NENA Technical Committee to indicate the sequence of development and methods that are used to integrate Internet Protocol (IP) into an Enhanced 9-1-1 (E9-1-1) design.

i1 — immediate methods for Voice over Internet Protocol (VoIP).

i2 — a migratory (interim) solution for VoIP.

i3 — an IP-based, full E9-1-1 solution. The goals of Next Generation 9-1-1 (NG9-1-1) are:

- ◆ Enable end-to-end, IP-based E9-1-1 design.
- ◆ Support VoIP-originating call delivery.
- ◆ Transition current wireline and wireless service providers to IP interface technology.
- ◆ Support IP mobility users and all capabilities of i2.
- ◆ Utilize extended capabilities of IP to provide location and other information with the call, as well as other subsets of relevant data.
- ◆ Provide a standard NG9-1-1 solution that incorporates all requirements of E9-1-1 and the potential to easily support future IP-based communications devices.

ICA (in-calls appearance)

A display for calls that are received from an ACD queue. The ICA displays the concise location information, ANI, or calling name and number of a received call. After a call is received on the ICA, the call can be moved to a local PCA, where the call can be handled. The **Move to PCA** feature frees the ICA to receive another call from ACD.

You cannot place a call from the ICA.

ILIR (Incorrect Location Information Report)

A report that captures incorrect location information, the corrections that are made, and any reasons for the incorrect information from telecommunicator entries in the Discrepancy Report of the call information display (CID). The available fields on the ILIR are configured in DDS Configurator.

IP (Internet Protocol)

The network layer for the Transmission Control Protocol over Internet Protocol (TCP/IP). It is a connectionless, best-effort, packet-switching protocol.

An IP suite is the set of communications protocols that implement the protocol stack on which the Internet runs. The IP suite is commonly referred to as the TCP/IP suite after the two most important protocols in it: the TCP and the IP.

IPS (IP phone service)

A component that resides on the Data Distribution Service (DDS) server and provides the services that are required to use an Internet Protocol (IP) phone as a 9-1-1 call-taking position.

IRR (Instant Recall Recorder)

The Vesta Solutions product that records emergency and administrative calls, locally, and allows call takers to access the recordings database for playback.

ISP (Internet service provider)

The provider of local access to the Internet. An ISP has the equipment and the telecommunication line access that are required to have a point of presence on the Internet.

L

LAN (local area network)

A network that connects computers in a small geographic area, such as a home, campus, or office complex. A LAN is based on Ethernet technology.

LIS (location information server)

A functional entity that provides locations of endpoints. An LIS can provide location by reference or by value. If location is provided by a value, the value is supported in geographic or civic forms.

An LIS can be queried by an endpoint for its own location or by another entity for the location of an endpoint. In either case, the LIS receives a unique identifier that represents the endpoint (for example, an IP address, circuit-ID, or MAC address) and returns the location (value or reference) that is associated with that identifier. The LIS is also the entity that provides the dereferencing service by exchanging a location reference for a location value.

LoST (Location-to-Service Translation)

A protocol that takes location information and a service URN and returns a URI. LoST is generally used for location-based call routing. In NG9-1-1, LoST is used as the protocol for the ECRF and LVF.

M

MAC (media access control)

The NIC sub-layer that identifies an endpoint or other IP-enabled device on a network.

In the OSI reference model, the MAC layer extends from the data link layer (layer-2) to the physical layer (layer-1).

The MAC address is a 48-bit hexadecimal number that is unique to each NIC and is programmed into the NIC when the card is manufactured.

MCA (multiple call appearance)

A console call appearance that represents a queue of calls, and shows the number of calls in a queue and the longest wait time of a call in a queue. A priority level can be assigned to an MCA from 1 to 10. A telecommunicator can answer directly from an MCA or from a button that shows the ringing time of the queue with the highest priority.

Answering an MCA call moves the call to a personal call appearance.

MDS (Media Distribution Service)

A redundant server that provides telephony services, such as the interfaces between the public telephone system and the system, as well as ACD of both emergency and administrative calls.

MIS (management information system)

A subset of the overall internal controls of a business that covers the application of people, documents, technologies, and procedures by management accountants to solve business problems, such as costing a product, service, or a business-wide strategy. An MIS is distinct from regular information systems in that they are used to analyze other information systems that are applied in operational activities in an organization.

VESTA Analytics is an example of an MIS.

N

NENA (National Emergency Number Association)

A not-for-profit corporation and networking source that promotes research, planning, and training. NENA strives to educate, set standards, and provide certification programs, legislative representation and technical assistance for implementing and managing 9-1-1 systems.

NG9-1-1 (Next Generation 9-1-1)

An initiative that is aimed at updating the 9-1-1 service infrastructure in the United States and Canada to improve public emergency communications services in a wireless mobile society. In addition to calling 9-1-1 from a phone, NG9-1-1 allows the public to transmit text, images, video, and data to a call center.

NG9-1-1 is an IP-based system that is composed of managed IP-based networks (ESInets), functional elements (programs), and databases that replicate traditional E9-1-1 features and functions, and provide additional capabilities. NG9-1-1 is designed to provide access to

emergency services from all connected communications sources, and provide multimedia data capabilities for PSAPs and other emergency service organizations.

NIC (network interface card)

A device that allows a network element or other IP-enabled device to communicate over a network. A NIC is both an OSI layer-1 (physical layer) and a layer-2 (data link layer) device. The NIC provides physical access to a networking medium and provides a low-level network element addressing scheme by using the NIC MAC address.

NMS (Network Management System)

A program that collects, consolidates, and presents system node status and error syslog events that are generated from management servers and various Advanced Service Node (ASN) virtual machines (VM).

The third-party NMS technology that is deployed with VESTA 9-1-1 is the [OpenNMS](#) Horizon platform, an open-source, network-monitoring and management system that is supported by the OpenNMS Group as well as by a community of users and developers.

NPA (numbering plan area)

An established three-digit area code for a particular calling area.

P

pANI (pseudo-automatic number identification)

A system that identifies the location of the base station or cell site through which a mobile call originates. It is a unique, non-dialable number that is used to route wireless calls.

The prefix *pseudo* refers to the fact that it is not a true ANI but a number that is used to look up the cell sector from which a call originates.

Also known as *PANI*, *P-ANI*, or *routing number*.

PBX (private branch exchange)

Privately owned telephone-switching equipment that is usually situated on a customer premises with an attendant console (for example, in an office or campus environment). A PBX connects endpoints to each other, to the PSTN, and usually to data networking services.

PCA (personal call appearance)

A console call appearance that lets a telecommunicator answer an administrative or emergency call that arrives from another console, phone, and automatic call distribution (ACD) queue. A call that is answered on a multiple call appearance (MCA), shared call appearance (SCA), or is moved from an individual call appearance (ICA) can be moved to an available PCA. A telecommunicator can also make a call from a console by using the PCA. One PCA is used for every participant that is added to a conference call. The PCA cannot be shared nor is visible at other positions.

PIDF-LO (Presence Information Data Format Location Object)

A means to represent location information in a SIP header by using an XML schema.

PSAP (public safety answering point)

A facility that is equipped and staffed to receive and manage emergency telephone number calls. It is responsible for dispatching a response from emergency-response agencies (such as police, fire, or EMS) that are under its direction, or for transferring a call to another call center for dispatching a response.

A primary PSAP is the initial answering location of an emergency call. An alternate PSAP can receive calls when the primary PSAP is unable to do so.

PSTN (public switched telephone network)

Originally, a concatenation of the world's public circuit-switched telephony networks. PSTN services now include connection to both mobile and landline endpoint.

The PSTN uses E.164 addressing.

The PSTN is governed by technical standards of the ITU-TSS.

Q

QDN (queue directory number)

The directory number that a telecommunicator can dial to transfer a call by using the TTQ feature.

QoS (Quality of Service)

- 1 A set of protocols that is used to manage bandwidth and minimize delay, jitter, and packet loss for real-time, time-sensitive IP datagrams, such as voice packets. QoS uses priority levels to provide predictable service levels to packets as they move through networks.
- 2 A measure of the telecommunications — voice, data, and video — service quality that is provided to a subscriber.

R

RTP (Real-time Transport Protocol)

An IP protocol that transports media (voice, video, text) that has a real-time constraint.

RTS (real-time statistics)

VESTA 9-1-1 supports the presentation of real-time statistical information through adapters that process and format text and call event information for presentation in, for example, VESTA 9-1-1 Heads-Up Display and the Queue Display window.

S

SAM (Sound Arbitration Module)

Hardware, managed through a USB, that hosts headsets, footswitch, recorders, and speakers.

SCA (shared call appearance)

A line appearance that shows on all consoles to which they are mapped. An SCA can be an emergency line (inbound calls), administrative line (inbound calls), direct-access administrative line (inbound and outbound calls), and ringdown line (inbound and outbound calls). Any telecommunicator can answer a call that is ringing on an SCA. Calls that are placed on a system hold can be picked up on any SCA.

SIP (session initiation protocol)

A text-based signaling protocol (RFC 3261) that defines a method for establishing multimedia sessions over the Internet. SIP is used as a call-signaling protocol in VoIP i2 and i3.

SMS (Short Message Service)

A service that is typically provided by mobile carriers that sends short (160 characters or less) messages to an endpoint. SMS is often fast, but not real-time.

STA (Selective Transfer Agency)

A feature that allows voice or data types of speed dialing, or both, and lets call takers contact one or more types of emergency service providers that are specific to an emergency telephone number caller's location. This feature uses an ESN, which is either associated with the incoming trunk or is furnished in the LI that is acquired through a request to an outside database by furnishing it with the caller's telephone number as a search key.

T

TCC (text call center)

The interface between a carrier-originated, wireless 9-1-1 text user and the PSAP environment. The TCC uses some of the functions of core NG9-1-1 system design, with specialized functionality for SMS text-to-9-1-1. A PSAP can connect to multiple carriers through a single TCC.

TCP (Transmission Control Protocol)

A part of the TCP/IP protocol suite. TCP allows two hosts to establish a connection and exchange streams of data.

text CS (text console service)

A console-based program that supports text communications between a console and a back-end system.

text MCA (text multiple call appearance)

A console call appearance that represents a queue of text calls and shows the number of calls that are in the queue and the longest wait time of a call in the queue. Picking up a text MCA call moves the call to a window in which it can be handled.

TTQ (transfer to queue)

A feature that lets a telecommunicator transfer a call to an ACD queue. TTQ also lets a telecommunicator create a conference call with another telecommunicator who is mapped to a queue. After a call has been transferred to ACD, it is distributed according to the routing scheme of the queue. Another telecommunicator can pick up the call from the queue for a

two-party call or can participate in a conference call with the originating telecommunicator and the caller.

TTY (teletypewriter)

A typewriter with an electronic communication channel that transmits typed messages over telephone lines and provides hearing-impaired and speech-impaired people with the ability to communicate over the telephone system.

U

URI (uniform resource identifier)

A string of characters that can identify a name or a resource on the Internet. Such identification enables interaction with representations of the resource over a network (usually the World Wide Web) by using specific protocols.

A URI may be classified as a locator (URL), or a Uniform Resource Name (URN), or both. A URN functions like a person's name, while a URL resembles that person's street address. In other words, the URN defines an item's identity, while the URL provides a method for finding it.

URL (uniform resource locator)

A unique domain name for any resource on the Internet.

URLs begin with a scheme, such as *http://*, and other scheme names include *https*, *mailto*, and *telnet*.

URN (uniform resource name)

A URI that uses a name scheme and does not imply availability of the identified resource. Both URNs and URLs are URIs, and a particular URI may be a name and a locator at the same time.

V

VDN (vector directory number)

An extension on an automatic-call distributor that directs an incoming call to a *vector*—a user-defined sequence of functions that may be performed, such as routing the call to a destination, providing a busy signal, or playing a recorded message. This number is a *soft* extension number and is not assigned to an equipment location. VDNs must be set up according to the customer's dial plan and the optional vectoring software must be enabled. Used in TTQ.

Also known as *virtual directory number*.

VM (virtual machine)

A server that hosts system services at the OS level and runs on physical hardware. A VM can host one or more entities.

VoIP (Voice over Internet Protocol)

A methodology and group of technologies that deliver voice communications and multimedia sessions over Internet Protocol (IP) networks.

Also known as *Internet telephony*, *IP telephony*, or *Voice over Internet (VOI)*.

VOX (Voice Operated eXchange)

A switch that activates when it detects audio over a specified threshold.

Also known as *voice operated switch*.

VPN (virtual private network)

A point-to-point connection over the Internet with message security that is provided by cryptographic tunneling protocols that ensure confidentiality, sender authentication, and message integrity.

VPN uses information that is stored in the signaling network and dialing plans to allow the use of public network facilities as if they are dedicated to a specific private network.

W

WAN (wide area network)

A computer network that covers a large geographical area. WANs connect LANs so that users and computers in one location can communicate with users and computers in other locations.

X

XSLT (Extensible Stylesheet Language Transformations)

A language that is used to transform XML documents into other XML documents or other formats such as HTML for Web pages, plain text or XSL Formatting Objects, which may subsequently be converted to other formats such as PDF, PostScript, and PNG.

With a transformation, the original document remains unchanged and a new document is created, based on the content of the original.

Index

A

- Abandoned Calls window
 - assets [125](#)
 - buttons [124](#)
- ACD readiness [88](#)
- ACD Readiness button
 - Not Available [91](#)
- Activity View
 - display panel [197](#)
 - features [195](#)
- agencies
 - agency ID [176](#)
 - agency name [176](#)
 - creating [176](#)
 - dedicated resources [175](#)
 - default agency [176](#)
 - role ID [176](#)
 - roles [177](#), [179](#)
 - shared resources [175](#)
- Agency capacities [216](#), [219](#)
- Agent
 - agent-based call routing [160](#), [161](#)
 - roles [179](#)
 - system context [111](#)
- Agent roles
 - configuring on console [180](#)
- Agents window
 - assets [122](#)
- Alarm panel
 - description [180](#)
- Algo 8180 SIP Audio Alerter [180](#)
- Analysis and reporting
 - overview [190](#)
- Answer button
 - toolbar [75](#)
- Answered tab
 - Abandoned Calls window assets [126](#)
- ASN
 - Network Management System [198](#)
 - operating system [214](#)
- Asset
 - containers [50](#)
 - toolbar [50](#)
- Assets
 - Abandoned Calls window [125](#)
 - Agents window [122](#)
 - Call Information Display window [65](#)
 - Contact Details window [114](#)
 - containers [50](#)
 - Dial Directory [95](#)

- Assets (*continued*)
 - Notifications window [148](#)
 - Queue Display window [92](#)
 - Text Calls window [84](#)
 - toolbar [50](#)
 - Web Browser [150](#)
- Audio
 - ACD queue options [160](#)
 - queued audio [160](#)
- Audio alerter [180](#)
- Audio buttons
 - Audio 1 [133](#)
 - Audio 2 [133](#)
- Audio features
 - Audio buttons [131](#)
 - Aux Audio [133](#)
 - IRR Playback [133](#)
 - Master Volume [133](#)
 - Master Volume window [135](#)
 - Sound Arbitration Module [131](#)
- Auto Answer
 - feature [162](#)
- Auto Attendant
 - capacities [215](#)
 - feature [161](#)
 - specifications [161](#)
- Auto Dial
 - importing [186](#)
 - migration utility [186](#)
- Auto Dial Migration utility [182](#), [186](#)
- Automated Abandoned Callback
 - specifications [217](#)
 - voice prompt specifications [218](#)
- Automatic Abandoned Call Distribution
 - Auto Answer [162](#)
 - Callback feature [95](#)
- Automatic Call Distribution
 - ACD Readiness [91](#)
 - audio options [160](#)
 - capacity [215](#)
 - Not Available [91](#)
 - Not Ready [91](#)
 - readiness [89](#)
 - Ready [91](#)
- Auxiliary audio
 - Audio buttons [133](#)

B

- Barge in
 - Join feature [78](#)

- Blind Transfer
 - button [75, 76](#)
- Branding
 - console [147](#)

C

- CAD. See Computer Aided Dispatch. [174](#)
- Call appearances
 - In Calls [52](#)
 - In Calls Appearance [52](#)
 - Multiple Calls [52](#)
 - Personal [52](#)
 - Personal Call Appearance [52](#)
 - Shared [52](#)
 - Shared Call Appearance [52](#)
 - Text MCA [87](#)
- Call data processing
 - description [19](#)
- Call Detail Records
 - description [194](#)
- Call distribution
 - description [18](#)
 - features [88](#)
- Call flow basics
 - description [157](#)
- Call information
 - concise location information [64](#)
- Call Information Display window
 - button [65](#)
 - customizing [65](#)
 - displaying call information [65](#)
 - Incorrect Location Information Report [65](#)
 - preferences [65](#)
- Call Information Transfer
 - ALI [152](#)
 - Voice-and-data contact transfer [152](#)
- Call routing schemes
 - circular [160](#)
 - linear [160](#)
 - longest idle [160](#)
 - ringall [160](#)
- Callback
 - button [95](#)
 - system context [111](#)
- Called tab
 - assets [127](#)
- Calling Party Number (CPN)
 - extraction [172](#)
- Calls
 - answering [75](#)
 - In Calls Appearance [58](#)
 - Multiple Call Appearance [63](#)
 - picking up [82](#)
- Calls (*continued*)
 - releasing [82](#)
 - Shared Call Appearance [61](#)
- Capacities
 - ACD queues [215](#)
 - agency [216](#)
 - auto attendant [215](#)
 - groups [216](#)
 - lines [215](#)
 - ports [217](#)
 - positions [215](#)
 - profiles [216](#)
 - system [215](#)
 - telecommunicator [216](#)
 - trunks [215](#)
- Capacities (small site)
 - ACD queues [219](#)
 - agency [219](#)
 - calls [219](#)
 - positions [219](#)
 - telecommunicators [219](#)
 - voice lines [219](#)
- CDRs
 - description [194](#)
- Centralized configuration
 - contact lists [157](#)
 - event notifications [157](#)
 - greetings [156](#)
 - layouts [156](#)
 - volume settings [157](#)
- Component types
 - VESTA 9-1-1 system [23](#)
- Computer Aided Dispatch
 - configuring [174](#)
 - message timing protocols [226](#)
 - protocols [226](#)
 - RS-232 protocols [226](#)
 - services [226](#)
 - TTY calls [174](#)
- Concise location information
 - description [64](#)
- Conference
 - Drop All button [76](#)
- Conference button [76](#)
- Conferencing calls
 - network conference [81](#)
 - no-hold conference [82](#)
 - on hold conference [76](#)
- Configuration Utility
 - Basic tab [183](#)
 - Database Servers tab [185](#)
 - error indicators [183](#)
 - Mapping Integration tab [184](#)
 - mode [183](#)

- Configuration Utility (*continued*)
 - Network tab 183
 - Connectivity
 - button 141
 - connected status 141
 - disconnected status 141
 - status bar 141
 - subsystems 143
 - window 141
 - Connectivity window
 - description 141
 - Console
 - branding 147
 - centralized configuration 156, 157
 - features
 - layout management 46
 - layouts 42
 - role customization 46
 - shortcuts 47
 - template 42
 - Console ACD readiness
 - Not Available 88
 - Not Ready 88
 - Ready 88
 - Contact
 - asset 104
 - Contact Details window 114
 - information 104
 - Contact Details
 - data contact 152
 - Dial Directory 114
 - shortcut 114
 - Contact Details window
 - contact information 114
 - group information 115
 - Contact list
 - custom fields 103, 109
 - importing 186
 - searching 109
 - settings 103, 109
 - Contact Manager
 - contact lists 104
 - context 111
 - functions 102
 - Transfer Agencies 108
 - Contact Search
 - advanced 112
 - button 112
 - search types 112
 - simple 112
 - Contact Search window
 - data contact 152
 - Container
 - assets 50
 - customizations 50
 - Container (*continued*)
 - customizing 50, 51
 - free-form grid 50
 - scrollable grid 50
 - toolbar 50
 - Context
 - Contact Manager 111
 - CouchDB
 - configuration database 156
 - Custom context
 - information 111
 - prefix when connected 111
 - prefix when idle 111
 - suffix when connected 111
 - suffix when idle 111
 - Custom fields
 - contact lists 103, 109
 - Customer branding
 - button 147
 - window 147
 - Customer branding window
 - description 147
 - Customer information windows
 - connectivity 140
 - customer branding 140
 - date 140
 - notification 140
 - time 140
 - Customer premise equipment
 - VESTA 9-1-1 system 23
 - Customizing
 - container 50, 51
- ## D
- Data Distribution Service
 - Centralized configuration 156
 - See DDS. 156
 - Data tab
 - Contact Manager 106
 - Data transfer
 - abandoned callbacks 103, 152
 - abandoned calls on ICA 103, 152
 - administrative lines 103, 152
 - contact shortcut 152
 - emergency lines 103, 152
 - ESInet 103, 152
 - printer 152
 - terminal 152
 - workstation 152
 - Data transfer services
 - call information 174
 - location information 174
 - Data-only contact
 - contact shortcut 152

Database Schema Upgrade Utility
description [185](#)

Date
button [141](#)
status bar [141](#)
window [141](#)
windows [141](#)

DDS
Auto Dial Migration Utility [186](#)
data transfer services [174](#)
monitoring [180](#)
setting agent roles [179](#)
setting agent-based call routing [161](#)
Speed Dial Migration Utility [186](#)
voice mail [163](#)

DDS Configurator
location information [172](#)
resources configuration [173](#)

DDS systems
specifications [214](#)

Default
system context [111](#)

Default agency [176](#)

Deployment options
private IP networks [26](#)
VESTA Core [26](#)
VESTA Essentials [26](#)
WAN distributions [26](#)

Deployment types
dual-site distributed [28](#)
multi-site centralized [29](#)
multi-site distributed [29](#)
single-site centralized [27](#)

Dial Directory
asset [95](#)
button [95](#)
Contact Details button [114](#)
customizing [101](#)
data contact [152](#)
ToolTips [95](#)

Dial Pad
button [95](#)

Dial Status
button [129](#)
window [129](#)

Dialing features [95](#)

Direct PSAP Interconnect
call handling actions
IP network behavior [165](#)
supported call types [165](#)

Display panel
VESTA 9-1-1 Heads-Up Display [204](#)

Drop All
button [76](#)

DSCP markings

DSCP markings (*continued*)
third-party [213](#)

E

EIM
operating system [214](#)

Enhanced Data
button [69](#)
request specification [218](#)
window [64, 69](#)

Enhanced Soft Phone [37](#)

ESInet
description [20](#)
emergency call centers [21](#)

ESN
group [107](#)

Event indicators
tab color [129](#)

Event notifications
audible alert [130](#)

Event Writer
description [198](#)

F

Flash button
transfers [77](#)

Formatting
Notes tab [105](#)

Free-form grid
asset [50, 51](#)

FXO
description [158](#)

FXS
description [158](#)

G

General description
VESTA 9-1-1 [18](#)

Genovation keypad
shortcuts [47](#)

Group
Contact Details window [115](#)
creating [104](#)
ESN [107](#)
information [107](#)
searching [109](#)

Group capacities [216](#)

H

Handling tab
Abandoned Call window assets [128](#)

Hardware requirements
 console workstations [213](#)
 virtualization [24](#)

I

ILIR
 Incorrect Location Information Report [65](#)

In Calls Appearance
 description [52](#)
 End PCP [77](#)
 moving call to PCA [80](#)
 parts [58](#)
 states [59](#)

Incorrect Location Information Report
 description [65](#)

Information
 button [145](#)
 contact [104](#)
 custom context [111](#)
 group [107](#)
 panel [145](#)
 panel assets [146](#)
 window assets [146](#)

Instant Recall Recorder
 See IRR. [190](#)

Intended audience
 product guide [14](#)

IP Phone
 hard keys [33](#)
 softkeys [33](#)
 voice mail [163](#)

IP Phones
 ACD readiness [92](#)

IRR
 components [190](#)
 features [190](#)
 IRR Instant Retrieval button [191](#)
 monitor voice [192](#)
 playback to caller [193](#)

IRR Instant Retrieval [190](#)

K

Keyboard
 shortcuts [47](#)

L

Layout management
 default layout [46](#)

Layouts
 logging on [46](#)
 templates [42](#)

Local Hold

Local Hold (*continued*)
 button [79](#)

Local survivability support [32](#)

Location information
 concise location information [64](#)
 configuring [172](#)
 data transfer services [174](#)
 displaying [65](#)
 protocols [221](#)

Log message notifications
 information [147](#)

Logging on
 layouts [46](#)

M

Management information systems
 VESTA Analytics [202](#)

Master Volume window
 Aux Audio [135](#)
 button [134](#)
 IRR Playback [135](#)
 Jackboxes [134](#)
 SAM defaults [134](#)

MDS Configurator
 description [159](#)

MDS systems
 specifications [214](#)

Media gateways
 FXO [158](#)
 FXS [158](#)
 Mediant 1000B gateway [158](#)
 Mediant 2000 gateway [158](#)

Mediant 1000B gateway
 description [158](#)

Mediant 2000 gateway
 description [158](#)

Messages
 panel [146](#)
 status bar [146](#)

Mitel 6768/ 6737i / 6757i
 expandable IP phone [33](#)

Mitel M675i
 expansion module [33](#)

Move to PCA
 button [80](#)

Multi Calls button
 description [63](#)

Multi-tenant agency
 default agency [176](#)
 resource allocation [177](#)
 roles [179](#)

Multiple Call Appearance
 description [52](#), [63](#)

N

- Network Conference
 - button [81](#)
 - ESInet conference [81](#)
 - Network Drop Last [81](#)
- Network Drop Last [81](#)
- Network Management System for ASN [198](#)
- Networked VESTA 9-1-1 systems [165](#)
- Next Generation 9-1-1
 - emergency call centers [21](#)
 - ESInet [20](#), [21](#)
 - i3 implementation [20](#)
- NG9-1-1 [18](#)
- No-hold conference
 - button [82](#)
- Notes tab
 - content [105](#)
 - formatting [105](#)
- Notifications
 - button [148](#)
 - window [147](#), [148](#)
- Notifications window
 - asset [148](#)

O

- On hold conference [76](#)
- On-hold RTP [163](#)
- OpenNMS [198](#)

P

- Personal Call Appearance
 - description [52](#)
 - parts [55](#)
- Pickup
 - button [82](#)
- Playback to caller
 - IRR [193](#)
- Pocket Dial Filter
 - capacities [217](#)
 - description [166](#)
 - specifications [217](#)
 - voice prompt specifications [217](#), [218](#)
- Port capacities [217](#)
- Preferences dialog box
 - Web Browsers panel [151](#)
- Prefix when connected
 - custom context [111](#)
- Prefix when idle
 - custom context [111](#)
- Private IP network support [165](#)
- Profiles capacities [216](#)

Q

- QoS
 - tagging [220](#)
- Queue
 - overflow [160](#)
- Queue Display
 - Customize tab [92](#)
 - Queues tab [92](#)
- Queue Display window
 - assets [92](#)
- Queue Selector
 - configurations [168](#)
 - description [168](#)
 - limitations [168](#)
 - specifications [218](#)
 - voice prompt specifications [218](#)
- Queued tab
 - Abandoned Call window assets [125](#)

R

- Ready button
 - ACD [89](#)
- Ready/Not Ready
 - ACD [89](#)
- Recent Calls window
 - button [115](#)
 - Inbound tab [115](#)
 - indicators [115](#)
 - Location tab [115](#), [120](#)
 - Outbound tab [115](#), [119](#)
- Related documents [14](#)
- Relays
 - Switch button [148](#)
- Release button [82](#)
- Resources configuration
 - DDS Configurator [173](#)
- Routing
 - by agent [160](#)
 - by console [160](#)

S

- Scrollable grid
 - asset [50](#), [51](#)
- Searching
 - contact lists [109](#)
 - group [109](#)
- Server models
 - required [214](#)
- Shared Call Appearance
 - description [52](#)
 - parts [61](#)
- Shortcuts

- Shortcuts (*continued*)
 - application [47](#)
 - application scope keys [47, 48](#)
 - assets [47](#)
 - contacts [47](#)
 - features [47](#)
 - function buttons [47](#)
 - system [47](#)
 - system scope keys [47, 48](#)
 - Small site
 - capacities [219](#)
 - Sound Arbitration Module
 - description [132](#)
 - Speed Dial
 - importing [186](#)
 - migration utility [186](#)
 - Speed Dial Migration utility [182, 186](#)
 - Status bar
 - Connectivity [141](#)
 - Connectivity button [141](#)
 - Date [141](#)
 - Information [145](#)
 - message panel [146](#)
 - number of messages [146](#)
 - status messages [146](#)
 - Time [141](#)
 - Subsystems
 - connectivity [143](#)
 - Suffix when connected
 - custom context [111](#)
 - Suffix when idle
 - custom context [111](#)
 - Supervised blind transfer
 - button [75](#)
 - Supervisor features
 - agent monitoring [139](#)
 - Supported products
 - third-party products [212](#)
 - Switch
 - button [148](#)
 - System
 - configurations
 - System capacities
 - components [215](#)
 - System components
 - descriptions [210](#)
 - System configurations
 - call flow [157](#)
 - System context
 - agent [111](#)
 - callback [111](#)
 - default [111](#)
 - System Hold
 - buttons [83](#)
 - rules [83](#)
 - System Maintenance Utility
 - SMU. System Maintenance Utility [26](#)
 - System management
 - overview [19](#)
 - System overview [18](#)
 - System specifications
 - audio
 - third-party
 - VESTA 9-1-1
 - System utilities
 - Auto Dial Migration utility [182](#)
 - Speed Dial Migration utility [182](#)
- ## T
- Telecommunicator capacities [216, 219](#)
 - Telecommunicator roles
 - configuring on console [180](#)
 - Telecommunicators
 - console [40](#)
 - console layouts [42](#)
 - workspace [40](#)
 - Telephony interfaces
 - gateways [158](#)
 - Terminology
 - VESTA 9-1-1 [232](#)
 - VESTA Classic [232](#)
 - Text calls
 - features [84](#)
 - flow [22](#)
 - Text Calls window
 - assets [84](#)
 - button [84](#)
 - Text Conversations
 - description [85](#)
 - window [85](#)
 - window button [85](#)
 - Text Multiple Call Appearance
 - parts [87](#)
 - Third-party products
 - supported [212](#)
 - Time synchronization
 - servers [220](#)
 - Toolbar
 - asset [50, 51](#)
 - assets [50](#)
 - Transfer Agencies [108](#)
 - Transfer calls
 - Flash [77](#)
 - to queue [160, 162](#)
 - Transfer to Queue (TTQ) [160](#)
 - Transferring calls
 - on-hold transfer [84](#)
 - supervised blind transfer [75](#)
 - unsupervised blind transfer [76](#)

VESTA 9-1-1 Product Guide

Transfers

- on hold Transfer [84](#)

TTY

- button [136](#)
- text calls [174](#)
- window [137](#)
- window assets [137](#)

U

Unsupervised blind transfer

- button [76](#)

Upgrade paths [25](#)

V

VESTA 9-1-1

- System Maintenance Utility [25](#)

VESTA 9-1-1 Heads-Up Display

- console viewer [204](#)

VESTA 9-1-1 Heads-Up Viewer [204](#)

VESTA 9-1-1 overview

- description [18](#)

VESTA Analytics

- licensing [202](#)

VESTA Core [30](#)

VESTA Essentials [31](#)

Virtualization

- requirements [24](#)

Virtualization requirements [24](#)

Voice media gateway

- description [158](#)

Voice monitor

- IRR [192](#)

Voice prompt specifications [218](#)

Voice recording

- ACD announcements [219](#)

- logging recording [219](#)

Voice-and-data contact [152](#)

Voice-only contact

- transfers [152](#)

W

Web browser

- button [149](#)

- window [149](#)

Web Browser

- asset [150](#)