

RAVIN Feature Guide

RAVIN Version 2.0 Features

RAVIN enables interoperable group communications between any traditional or IP based communications devices, including PCs, phones, two-way radios, PBX switches and IP Telephony systems.

Abstract

RAVIN™ is a NICS product designed for building group communications. RAVIN enables interoperable communications between any communications' devices, including PCs, phones, and radios from any manufacturer, operating at any frequency, both analog and digital.

This document describes RAVIN products, system components and features. The intended audience includes both business and technical evaluators who may be considering RAVIN as a communications solution, as well as reviewers evaluating RAVIN.

RAVIN Overview

RAVIN, from NICS, is a product suite designed for building group communication systems. RAVIN is an interoperability solution that works with communications hardware from any vendor. RAVIN enables voice communications between any connected devices, including phones, PCs, PDA's,

two-way radios, PBX Systems, Emergency Notification Systems, IDEN and Satellite networks regardless of manufacturer. RAVIN solves communications interoperability problems, decreases communications costs, and introduces new communications capabilities by connecting users over IP networks with standards-based hardware and software. RAVIN products include RAVIN for LMR designed for integration with two-way radios, RAVIN for Hoot and Holler, designed for deployment in financial institutions, and the RAVIN SDK, a development toolkit that allows NICS' and our Technology Partners to embed RAVIN technology as custom solutions.

RAVIN can be used in a wide variety of scenarios. Public Safety, Defense, Critical Infrastructure, and Financial Services professionals can use RAVIN worldwide in some of the most demanding communications environments.

RAVIN Application Scenarios

PUBLIC SAFETY	CRITICAL INFRASTRUCTURE	DEFENSE	FINANCIAL SERVICES
Land Mobile Radio integration	Two-way Radio integration	Tactical Communications	Hoot and Holler
Multi-jurisdictional communications	Dispatch	Two-way radio and PC integration	Intercom
Dispatch	Event-based Communications	Joint Command	Presence Management

RAVIN'S HIGH-LEVEL COMPONENTS

RAVIN's components include the RAVIN Management Server, the RAVIN Media Server and the RAVIN Communicators.

RAVIN MANAGEMENT SERVER

The RAVIN Management Server is a web-based application used to configure and manage a RAVIN domain. The RAVIN Management Server provides full control over low-level RAVIN components, network addressing, user and profile management, security, and software installation. RAVIN Management Server Blade PC can be configured with dual processors, hot swappable hard drives and RAID.

RAVIN MEDIA SERVER

The RAVIN Media Server acts as a media processing engine for the system, performing mixing, audio transcoding, and digitizing. The RAVIN Media Server runs as a lightweight service on Blade PC technology. RAVIN Media Servers are robust network components that support remote management and failover IP gateway interfacing to external communications, notification and I/O devices.

RAVIN COMMUNICATORS

The RAVIN Communicators let end users and communications console operators communicate over RAVIN Channels from RAVIN's Blade PC and Fiber Optic desk mount Head end Adapter. RAVIN Communicators let you speak to anyone connected to a RAVIN Channel, including users on phones, PCs, and two-way radios.

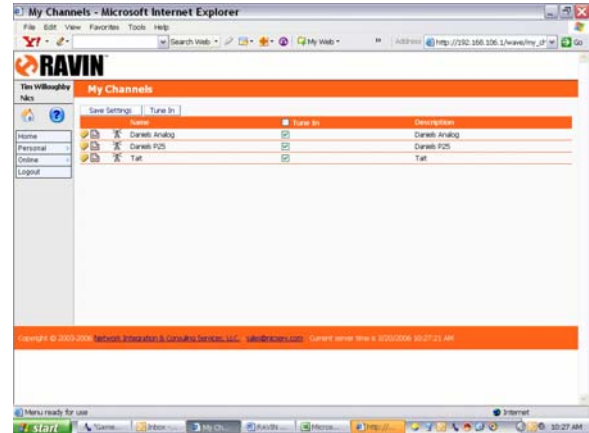
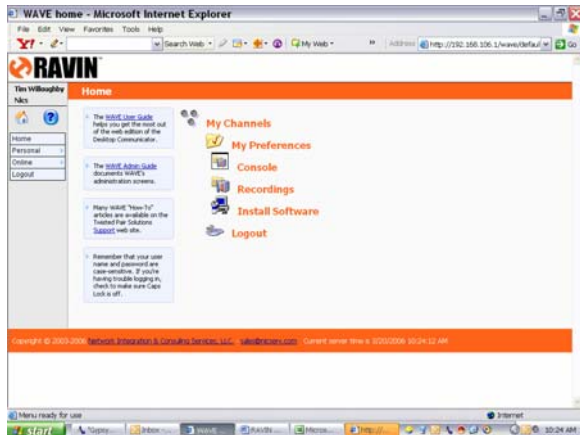
The RAVIN Communicators support status, presence, text chat, and automatic reload. There are three different RAVIN Communicators plus a special client for Cisco IP phones:

- The RAVIN Web Communicator is a lightweight application that runs in a web browser
- The RAVIN Windows Communicator is a full-featured end-user application that runs on Windows PCs
- The RAVIN Console Communicator is hardware and software console intended for communications professionals in control center environments.
- The RAVIN Cisco IP Phone Client provides direct access to RAVIN Channels from a Cisco IP phone.



RAVIN MANAGEMENT SERVER FEATURES

The RAVIN Management Server is a web-based application used to configure and manage a RAVIN domain.



ARCHITECTURE AND SECURITY

The RAVIN Management Server is a set of web services that run within Microsoft Internet Information Services (IIS). RAVIN Management Server architecture and security characteristics include:

- Control over all RAVIN system components from a web Browser
- Secure connections supported via HTTPS
- System configuration database
- Supports Microsoft Active Directory
- Supports user privilege authentication
- Requires Microsoft Windows 2000 Server or Windows Server 2003

The RAVIN Management Server supports a User/Profile privilege model, enabling group permission control at the Profile level. Profiles may be mapped to Active Directory, or may be RAVIN system-specific. All system administration features require a RAVIN account with administrative privileges. All RAVIN users have access to limited personal features within the RAVIN Management Server.

Although the RAVIN Management Server is responsible for authentication and configuration management tasks, the RAVIN Domain can run for up to 30 days in a “headless” mode using cached configuration data should the Management Server become unavailable. There is no single point of failure in a RAVIN system. The RAVIN Management Server provides full configuration control over all RAVIN system components.

INTERNAL RAVIN COMPONENTS	
RAVIN Components	Description
Channels	The most basic RAVIN logical communications component is the Channel. RAVIN Channels are used to group communications devices in the system. Channels typically contain related similar devices, such as “all the police radios” or “all the IP phones on the second floor”. There are several different types of Channels; each specialized for a distinct role. See Channel Features for more information.
Sessions	RAVIN Sessions are used to join RAVIN components into audio conferences. Sessions may be permanent infrastructure components or ad hoc Sessions created on the fly to solve a specific need. Sessions are very flexible and can associate Channels, Devices, and other infrastructure components. See Session Features for more information.
Media Servers	RAVIN Media Servers act as media processing engines for the system, performing mixing, audio transcoding, and digitizing. See Media Server Features for more information
Interfaces and Gateways	RAVIN is not intended as a stand-alone stovepipe system. The application supports a variety of telephone and radio gateway interfaces and gateway devices from multiple vendors, and NICS actively seeks out new generally available gateway devices to help extend the system onto even more types of systems and devices. You don't need to buy new radios or telephones to use RAVIN. See Interface, Gateway, and Device Features for more information.
Audio Devices	The various Devices connected to a RAVIN system include analog and digital phones, cell phones, PCs, and analog and digital two-way radios. These devices can be from any manufacturer, operating at any frequency. RAVIN is enthusiastically supported by many hardware manufacturers, who see it as a ready means of extending their devices onto an IP network and enabling interoperability. See Interface, Gateway, and Device Features for more information.
Audio Control Filters and Tones	RAVIN offers precise control over audio control tones used to change radio channels, boost power, and begin and end transmissions. Tones can be grouped into patterns and sequenced or transmitted simultaneously. Audio tones can be sent directly from the RAVIN Communicators, or generated via Remote Tone Injection by the RAVIN Media Server.
Reports	Call Detail Records are available through the provided Crystal Reports reader. Reports are drawn directly from the production database in real time.
Recordings	Any RAVIN Session can be digitally recorded and saved to disk as a convenience or for auditing purposes. RAVIN recordings are stored in either G.711 or .wav file formats. Permission to access or delete recording files from within RAVIN is controlled.
Users	Users may be RAVIN-specific or imported directly from Microsoft Active Directory and managed externally. All user logins are password validated. Numeric IDs and PIN values may be assigned to a user for RAVIN IP Phone Client access. A User can also be given specific phone numbers for use with the soft phone in the RAVIN Console Communicator.
Profiles	Profiles may be RAVIN-specific or imported directly from Microsoft Active Directory and managed externally. Permissions are granted at the Profile level for privileges such as installing client software, console operation rights, sending alerts, reviewing recordings, and viewing reports. Profiles can be associated with any combination of Users, Channels, Sessions, and Media Servers.
Management Console	The RAVIN Management Console is a web-based application used to create ad hoc Sessions and Remote Patches. Access to this application is controlled at the Profile level.
Publish and Subscribe	Enables sharing channels between multiple Management and Media Servers in different RAVIN domains.

RAVIN MEDIA SERVER FEATURES

RAVIN Media Servers perform mixing, filtering, proxying, and audio transcoding within the RAVIN system. If the Management Server is the brains of the system, the Media Server is the brawn. The Media Server has a number of important audio and control traffic responsibilities within RAVIN.

MEDIA SERVER RESPONSIBILITIES

RAVIN Component	Description
Audio Transcoding	Converting digital audio between different Codec's. Individual Channels may each use a different Codec.
Mixing	Combining audio from multiple channels together for a conference, session, or multiplex operation.
Filtering	Removing radio control tones from the audible audio stream to avoid rebroadcasting tones.
Interfaces and Gateways	Proxying traffic to and from radios, PBX & PSTN, Satellite communications, I/O devices, discrete voting comparators, IDEN networks, H323 & SIP devices, and a host of external gateway technologies.
Hosting Sessions	RAVIN Sessions are each hosted on a RAVIN Media Server. Both long-term infrastructure and temporary ad hoc Sessions are supported.
Tone Generation	Generating radio control tones used for channel changes, power changes, and similar functions.
H.323 Signaling	Making and receiving H.323 phone calls
Radio Traffic Entry Point	Entry point into RAVIN for two-way radio traffic internally or proxied from third party radio gateways.
Failover	Enabling failover support for redundant Media Server Failover Peers.
Remote Patches	Remote Patches visible in the RAVIN Console Communicator are implemented as Sessions hosted on a Media Server.

REMOTE CONTROL

RAVIN Media Servers are managed remotely using the RAVIN Management Server. The Media Servers screen displays all Media Servers in the RAVIN domain, along with current status and failover state. The Media Servers screen, which refreshes automatically, permits remote configuration of multiple servers followed by a single commit step that applies changes to the system.

MEDIA SERVER REDUNDANCY

RAVIN Media Servers are designed to work together in pairs called Failover Peers. One Media Server will be designated as the Primary server and the other will be a backup or secondary server. Should something happen to the Primary server, the Secondary server can take over for it. A RAVIN Session hosted on both servers will typically keep running uninterrupted if the Primary server goes down or loses network connectivity. There are some limitations to Media Server redundancy; for instance, unicast traffic is not supported.

RAVIN COMMUNICATOR FEATURES

The RAVIN Communicators provide direct access to RAVIN Channels from PCs and Cisco IP phones.

RAVIN CISCO IP PHONE CLIENT

The RAVIN Cisco IP Phone Client application extends RAVIN Channels to Cisco 7940, 7960, and 7970 IP phones. The RAVIN Cisco IP Phone Client provides basic channel audio within the limited interface of the IP phone, allowing you to communicate directly with radios, PCs, phones, and other devices.

RAVIN WINDOWS COMMUNICATOR

The RAVIN Windows Communicator provides a rich interface to RAVIN Channels from any Windows PC. Speak and listen over any channel, send radio control tones to change radio channels or boost power, listen to instant replay audio, and control audio devices, volume, and stereo panning separately for each channel. The RAVIN Windows Communicator is a key component of all RAVIN installations.

RAVIN DESKTOP COMMUNICATORS

The RAVIN Desktop Communicators provide access to RAVIN Channels from a Windows PC. There are two different flavors: the Web Communicator runs inside a browser as an ActiveX control, and the Windows Communicator runs as an installed stand-alone program. The RAVIN Desktop Communicators are available with both the RAVIN for LMR and RAVIN for Hoot and Holler products.

RAVIN WEB COMMUNICATOR

The RAVIN Web Communicator provides access to RAVIN Channels directly from a web browser. Implemented as an ActiveX control within Microsoft Internet Explorer, the Web Communicator extends basic RAVIN communications by simply clicking a Tune In button in the RAVIN Management Server.

Comparing The RAVIN Desktop Communicators

RAVIN Component	Windows Communicator	Web Communicator
Access multiple RAVIN Channels (Tx/Rx/PTT/Simulcast)	X	X
Send audio control tones to radios	X	X
Stereo panning, microphone and speaker volume controls	X	X
System presence displays who is speaking	X	X
Installs as a Windows application	X	
Installs as an ActiveX control		X
Instant Replay, save replay audio as a local .WAV file	X	X
Multi-channel latching	X	X
Customizable hot keys	X	X
Update notifications and auto-reload	X	
Text messaging	X	
Can auto-start when you log into Windows	X	
Remote Channel Access works over unicast VPN connections	X	
Activity log of recent history	X	
Point-to-Point Intercom	X	
Channel activity list above the Windows taskbar	X	
Compact view mode displays up to 40 channels on-screen	X	



RAVIN CONSOLE COMMUNICATOR

The RAVIN Console Communicator is a sophisticated dispatch / control center console with the communications capabilities that professional console operators expect. Designed for use in integrated environments, the RAVIN Console Communicator provides patching, monitoring, text chat, instant replay, and telephony features. The RAVIN Console Communicator is available as a component of RAVIN for LMR.

CONSOLE COMMUNICATOR CAPABILITIES

RAVIN Console Communicator Capabilities		RAVIN Console Communicator Capabilities	
Access multiple RAVIN Channels (Tx/Rx/PTT/Simulcast)	X	Cross-Channel Muting	X
Send audio control tones to radios	X	Real time Configuration Updates	X
Stereo panning, individual volume and speaker controls	X	Independent Channel Monitoring	X
System-wide presence	X	User configurable Layouts	X
Point-to-Point communications	X	Unlimited Channel View	X
Enhanced Tone Generation	X	Unlimited local and remote channel patching	X
Enhanced Instant Replay	X	Minimum Mute level	X
LMR Channel Sync	X	Remote muting by supervisors	X
SELECT and UNSELECT	X	Configurable audio monitors	X
IP Telephony / Soft phone client	X	(H323 Make, Take, Break Calls)	X
Text messaging	X	Touch Screen Support	X
Customizable hot keys	X	Simultaneous multiple sound devices	X

COMPARING THE RAVIN COMMUNICATORS			
Communicator Capabilities	IP Client	Desktop Communicator	Console Communicator
Access multiple RAVIN Channels (Tx/Rx/PTT/Simulcast)	X	X	X
Channel View Limit	X	X	
Run on Cisco Phones (7920,7940,7960, 7970)	X		
Runs on Networked Windows PC's		X	X
Priority Access Notification		X	
Additional Web-based Interface		X	
Update Notifications		X	
Remote Channel Access via unicast VPN		X	
Point to Point Communications		X	X
System-wide Presence		X	X
Text messaging		X	X
Simulcast to Multiple Channels		X	X
Basic to Generation		X	X
Instant Replay Audio		X	X
Basic stereo panning, individual volume & speaker control		X	X
LMR Channel Sync		X	X
Customizable Hot Keys		X	X
SELECT and USELECT		X	X
IP Telephony (H323 make, take, break calls)			X
Cross-channel Muting		X	X
Real-time Configuration Updates			X
Enhanced Instant Replay Audio			X
Minimum Mute level			X
Unlimited local and remote channel patching			X
Unlimited channel view			X
Remote muting by supervisors			X
Configurable audio monitors			X
Enhanced Tone Generation			X
Independent Channel Monitoring			X
User Configurable Layouts			X
Touch Screen Support			X
Simultaneous multiple sound devices			X

CHANNEL FEATURES

RAVIN Channels are basic communications pathways within the RAVIN System. Several distinct specialized types of Channels are available.

RAVIN CHANNEL TYPES

Channel Type	Description	Network Characteristics
Standard	Typically used to connect end user devices, such as PCs, phones, and radios, into RAVIN systems. Standard Channels are visible to RAVIN Communicator users.	Multicast
Multicast Trunk	Used for interconnects between RAVIN Media Servers (Sessions) and raw RTP endpoints, such as router interfaces and gateways.	Multicast
Point-to-Point Trunk	Used for point-to-point trunking interconnects across WAN segments or in Unicast network environments. Often used to connect two RAVIN Media Servers across a WAN.	Unicast
Multiplex	A variant of a Point-To-Point Trunk Channel that can multiplex up to 24 Standard Channels across a Unicast WAN segment.	Unicast

Each type of RAVIN Channel is extensively configurable to meet specific situational requirements. For instance, channels can be Receive Only, Transmit Only, or Transmit and Receive. Channels can have Latched Microphones which essentially hold down the microphone's Talk button for you.

Channels can transmit specific radio control tones to change channels, go to high power, or perform other audio control tasks, and those controls can be exposed to RAVIN Communicator users. In bandwidth-constrained network environments, you have the ability to tune tradeoffs between audio quality and bandwidth utilization by selecting from a number of different Codec types.

CODEC	Bandwidth	Audio Quality
ITU G.711 ALaw 64K	64kbps	Excellent
ITU G.711 ULaw 64K	64kbps	Excellent
ITU G.721	32kbps	Good
ITU G.726	16kbps, 24kbps, 32kbps	Good
ITU G.729	8kbps	Good
GSM 6.10 Full rate	13kbps	Fair
RAVIN PCM 16 Bit-8Khz	128kbps	Excellent
Ramalho RGL ALaw G.711 Lossless	30kbps- 65kbps	Excellent
Ramalho RGL uLaw G.711 Lossless	30kbps-65kbps	Excellent
Speex	2.15kbps-24.6kbps	Fair to Excellent

Additional Channel tunings include Quality of Service (QoS) settings, Voice Activity Detection (VAD), adjustable Jitter Buffers, Internal and AES Encryption, and User Profile associations to help manage access restrictions.

THE CONTROL CHANNEL

Each RAVIN Channel is able to carry control data along with audio traffic via the RAVIN Control Channel. The Control Channel transmits real-time data, such as User Presence (the identity of the person speaking or typing on the Channel), and User Status (whether a user is available, on the phone, etc.). Control Channel data is also used for user muting and cross-muting for co-located users.

SESSION FEATURES

RAVIN Sessions join Channels and/or Devices together for audio conferences. Sessions may be permanent infrastructure components or temporary ad hoc conferences. Remote and local patches visible in the RAVIN Console Communicator are implemented as Sessions. There are several distinct types of Sessions within RAVIN.

RAVIN SESSION TYPES

Session Type	Description
Ad-hoc	Used to patch two or more Channels together temporarily, letting all users on the patched Channels communicate with each other. Ad hoc Sessions are used to create Remote and Local Patches in the Dispatch Communicator and Conferences in the Management Console.
Advanced Session	Offers the most complete set of configuration choices for complex adjustments. Other sessions are simpler subsets of the Advanced Session.
Meet-me Session	Allows multiple anonymous callers dial-in access to a RAVIN conference hosted on a Media Server.
Channel Access Session	Allows multiple anonymous callers direct dial-in access to a RAVIN Channel.
Group Call Session	Instructs the RAVIN Media Server to make multiple outbound calls to pre-defined participants. Often used for emergency notifications or, in the financial industries, for morning calls and hoot systems.
Reflector Session	Sources audio from one or more inputs and transmits the combined stream to one or more outputs. Reflector sessions are unidirectional.
Trunking Session	A Trunking Session funnels up to 24 Standard Channels into a single Multiplex Trunk Channel.

Sessions are extremely flexible and offer many separate configuration parameters for unique situations. A few of the more interesting Session characteristics are shown in the chart below.

CONFIGURABLE SESSION CHARACTERISTICS

Session Characteristic	Description
Conference ID	Identifies the session when accessed from a telephone.
Listen only and Speaker PIN's	Digit codes entered by callers granting listen-only or speaking access to a Session.
Dial-in and Dial-out Greetings	Configurable greetings which may be turned off.
Channel Access Session	Allows multiple anonymous callers direct dial-in access to a RAVIN Channel.
Audio Notification	Can be set to notify other Session participants when a caller joins or leaves a Session. These notifications may be configured to include the caller's name.
Hosting Media Servers	Associates the Session with specific Media Servers, enabling Failover and scalability.
Specify Participants	Associates the Session with the RAVIN Channels and Devices that are allowed to participate.
VAD	Voice Activity Detection lets the Session filter audio coming in from endpoints such as routers or gateways connected to noisy analog lines.
Tone Pattern	Describes a static audio tone pattern to be played whenever audio is transmitted to a specific Channel. Useful for Sessions that must broadcast to radios.
Ring-No-Answer Disconnect	Sets the number of Ring-No-Answer cycles for an outbound calling session before the call is disconnected.
Recording	Controls how Session audio traffic should be digitally recorded and stored on disk. Timeouts, the recording Codec, Call Data Recording information, and recording alerts are all configurable.
Specify Profile	Access permission can be granted to specific user profiles.

INTERFACE, GATEWAY, AND IP TELEPHONY FEATURES

RAVIN is designed to be a flexible and connected system able to interface with a variety of hardware devices.

TWO-WAY RADIO INTERFACES

RAVIN for LMR is able to interface directly with analog radio interfaces. RAVIN is able to send and receive radio control tone signals, including sequenced and simultaneous tone groupings. Tones can be sent from the Media Server or from the RAVIN Communicators, and can be filtered. Multiple sets of tones can be configured, with different Channels each containing radio-specific sets of tones.

TELEPHONE INTERFACES

RAVIN currently supports H.323 telephony, including gateways from Avaya and Cisco. Several different types of telephony-related interfaces are supported.

TELEPHONY INTERFACES SUPPORTED IN RAVIN

Telephony Interface Type	Description
Gateways	Telephony systems such as Avaya Communication Manager, Cisco CallManager, or digital PBX systems like Nortel Meridian 1 can function as gateways for RAVIN. Gateways act as bridges between the VoIP calls originating in RAVIN and the PSTN.
Registrars	A Registrar or gatekeeper acts like a DNS registry for IP phones. In directory-enabled VoIP sites, IP phones register with the registrar, which RAVIN queries for address information. This allows RAVIN to connect directly with the IP phone, without going through a gateway.
Devices	H.323 endpoints including IP phones, soft phone applications such as Microsoft NetMeeting, H.323 connections to the PSTN, and H.323 connections to other RAVIN servers.
Dial plans	RAVIN is able to define multiple dial plans for use when making outbound calls via specific gateways. Dial plans include information like the originating area code, whether 10-digit dialing is always required, and outgoing access codes for local and long Distance calls.

PBX

RAVIN allows you to create a PBX that rivals the features and functionality of traditional telephony switches. Other PBXs are expensive, proprietary, and now passé. RAVIN is cost-effective, low-maintenance, and expandable enough to handle all voice networking. Analog phones and ADSI screen phones are also supported.

Interactive Voice Response (IVR)

RAVIN's flexible IVR capability allows a user to interact with a database using a menu of pre-recorded voice-clips. Using MySQL and other popular databases, RAVIN can interact with the caller through touch tone inputs, record responses, query databases, and utilize scripts to perform specific tasks.

Auto-Attendant

RAVIN's auto-attendant features include greetings, extended greetings, music-on-hold, voice message forwarding and message appending. RAVIN plays music or pre-recorded messages to customers on hold. Music can be sorted into various folders. Separate auto-attendant feature sets can be used for different situations.

The voicemail tree supports directories by department, employee, extension, etc., offering flexibility and allowing a small company to appear large. Unbound by the limits of traditional voicemail, RAVIN can support an unlimited number of simultaneous ports.

RAVIN IP Telephony Features

Call Features	Call Features	Traditional Telephony Interoperability
ADSI On-Screen Menu System	Supervised Transfer	E&M
Alarm Receiver	Talk Detection	E&M Wink
Append Message	Text to Speech (via Festival)	Feature Group D
Authentication	Three-Way Calling	FXS and FXO
Automated Attendant	Time & Date	GR-303
Blacklists	Transcoding	Loopstart, Groundstart, winkstart
Blind Transfer	VoIP Gateways	MF and DTMF support
Call Detail Records	Voicemail	Robbed Bit Signaling (RBS) Types
Call Forward on Busy	Visual Indicator for Message Waiting	PRI Protocols
Call Forward on No Answer	Stutter Dialtone for Message Waiting	4ESS
Call Forward Variable	Voicemail to email	BRI (ISDN4Linux)
Call Monitoring	Voicemail Groups	DMS100
Call Parking	Web Voicemail Interface	Euro ISDN
Call Queuing	Zapateller	Lucent 5E
Call Recording	Flexible Extension Logic	National ISDN2
Call Retrieval	Interactive Directory Listing	NFAS
Call Routing (DID & ANI)	Interactive Voice Response (IVR)	Computer-Telephony Integration
Call Snooping	Local and Remote Call Agents	PCIP (RAVIN Gateway Interface)
Call Transfer	Macros	Graphical Call Administrator
Call Waiting	Music On Hold	Outbound Call Spooling
Caller ID	Music On Transfer	Predictive Dialer
Caller ID Blocking	Flexible Mp3-based System	TCP/IP Management Interface
Caller ID on Call Waiting	Random or Linear Play	Codecs
Calling Cards	Volume Control	ADPCM
Conference Bridging	Predictive Dialer	G.711 (A-Law & i-Law)
Database Store / Retrieve	Privacy	G.723.1 (pass through)
Database Integration	Open Settlement Protocol (OSP)	G.726
Dial by Name	Overhead Paging	G.729 (thru purchase of comm license)
Direct Inward System Access	Trunking	GSM
Distinctive Ring	Protocol Conversion	iLBC
Do Not Disturb	Remote Call Pickup	Linear
ENUM	Remote Office Support	LPC-10
Fax Transmit and Receive	E911	Speex™

Conference Bridge

The Meet Me Bridge is fully integrated into RAVIN and supports features essential for business conferences, saving the RAVIN user from what was once a huge expense.

The Conference Chairperson can select a “listen only” or a “talk and listen” conference. When the Chairperson hangs up the other parties are disconnected. Conferences may be securely accessed only through a pre-defined PIN.

Media Server

RAVIN augments existing PBXs and Gateways with select features for either PSTN or IP protocols. Acting as an adjunct to a legacy system or soft switch, RAVIN can extend features and functionality by providing voicemail and conferencing services. RAVIN can also retrofit traditional TDM PBXs with VoIP extensions to remote offices which appear as normal extensions of the PBX.

VoIP and Protocol Gateway

RAVIN's broad support of both traditional TDM and VoIP protocols permits the construction of flexible gateways between different channel types. Using RAVIN, it is not only easy to create many common varieties of protocol converters, translating between

T1, E1, PRI, SIP, IAX, GR-303, MGCP, FXS, H323 and many others. It enables you to create more sophisticated gateways and gateways with redundant links. For example, an MGCP to SIP gateway with a PRI backup can be created in case SIP trunks are unavailable— the possibilities are nearly endless.

VoIP Switch

RAVIN can act as a soft switch in addition to acting as a traditional TDM switch, allowing it to control a variety of devices including phones, gateways, media servers, and other RAVIN servers. It can handle virtually any VoIP protocol, including SIP, IAX, H.323, MGCP, and Skinny.

RAVIN collects call detail records and provides a variety of billing options (including Open Settlement Protocol) and may be configured to carry media (especially useful for SIP+NAT situations) or to have devices send media directly to one another. RAVIN adds extra IP or PSTN capabilities to existing PBXs and Gateways. RAVIN extends features and functionality by providing voicemail and conferencing services when acting as an adjunct to a legacy system or soft switch. RAVIN can also add remote VoIP office extensions to traditional TDM PBXs which appear as normal extensions from the preexisting PBX.

RAVIN SDK

The RAVIN SDK provides direct programmatic access to low-level RAVIN components like Channels, Sessions, and Devices via a Java Application Programming Interface (API). The RAVIN SDK permits development of complex custom applications that can directly harness the power of RAVIN. The RAVIN SDK enables password-authenticated logins, profile selection, transmitting and receiving channel audio, opening and closing sessions, transmitting and receiving control channel data, monitoring system presence and user status, and many other detailed operations. NICS uses the RAVIN SDK and associated RAVIN Engine to power the RAVIN Console Communicator. The RAVIN SDK is available exclusively to RAVIN Technology Partners. Contact NICS for more information.