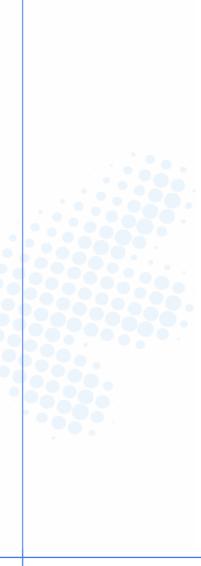


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RECORDING SYSTEM

SYSTEM ARCHITECTURE

OVERVIEW



AuthorCyberTech B.V.Version:3.17dDate:March 2007Reference:CT-MS-D-07003

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Table of Contents

1	Intro	duction	3
2	Arch	itecture overview	4
	2.4	Input layer	5
	2.2	Converter layer	6
	2.3	Recording interface layer	7
	2.4	Services layer	8
	2.5	User Interface	12
	2.6	Optional Applications	13
3	Conf	igurations overview	
	3.1	Stand alone server	
	3.2	Server/Satellite	16
	3.3	Multi-site	16
	3.4	CTI configuration	17
4	Harc	lware overview	18
	4.1	Stand-alone server configuration	18
	4.2	Server/Satellite configuration	
5	Softv	vare overview	22
	5.1	System Installation	22
	5.2	System configuration	32
	5.3	User administration	34
	5.4	System status	37
	5.5	Recorded calls	39
	5.6	Evaluation	42
6	Appl	ications	49
	6.1	Evaluation Application	49
	6.2	Incident Replay Application	
	6.3	Last Call Replay Application	
	6.4	PC Replay Application	
	6.5	Recorder API	

Appendix A – Available tapping cards

Appendix B – Support connectivity

Appendix C – Channel capacities

Index



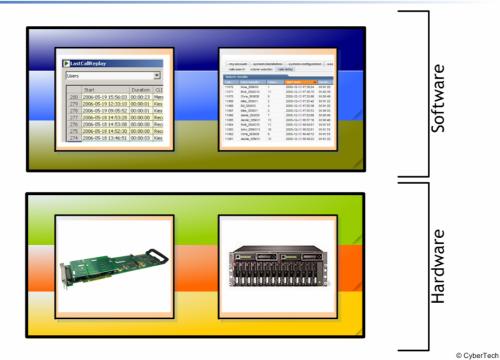
1 Introduction

This document gives a global overview of the system architecture and possibilities of Cybertech's recording system. It is intended for potential buyers of the recording system and provides an insight into the technical aspects of the system. It is not intended to be used as a commercial document nor as a user manual.

The overview of the recording system is divided into two main parts:

- 1. Hardware
- 2. Software

Overview



The hardware forms the basis of the recording system and comprises the CyberTech digital speech converter cards and commercial off-the-shelf (COTS) hardware.

The software that runs on top of the hardware consists of core services and user software.

This document describes the recording system in five parts;

- 1. The architecture overview
 - An overview of the 6 layers that make up the recording system
- 2. **Configurations overview** The available configurations
- 3. Hardware overview An overview of the COTS hardware possibilities
- 4. **Software overview** An overview of the user interface and possible settings
- 5. Applications An overview of the value-added software applications available

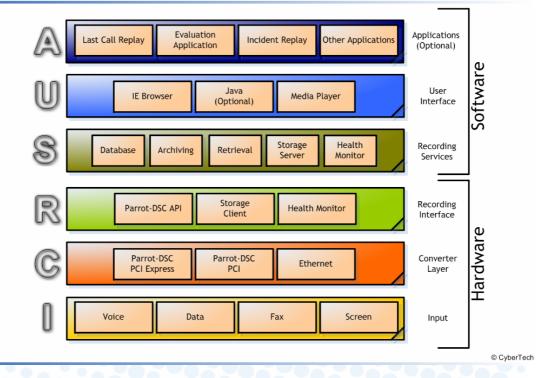


2 Architecture overview

The concept for the CyberTech recording system was based on commercial off-the-shelf (COTS) hardware and web-based software. This has resulted in a layered architecture made up of 6 layers:

- Input interface: resources for input, like digital extensions, analogue lines and trunk lines
- Converter layer: converts the input sources to files
- **Recording interface:** transfers the software instructions to the converter layer
- Services: runs the main components of the recording system, including a web-server
- User Interface: lets the user control the recording system via a web-based interface
- Applications: additional applications for specific user groups.

Each layer interfaces with its adjoining layer to create a complete Voice Recording System:



The bottom 3 layers are part of the Parrot-DSC product and mostly hardware-related. The middle hardware layer is either a hardware card (in the PCI or PCI-Express versions) for digital or analogue voice input, or a standard Ethernet card for VoIP input. The top hardware layer, the Parrot-DSC API, controls the hardware.

The top 3 layers of the recording system are software-related. The bottom software layer is comprised of the core software module, and the top software layer refers to the end-user applications.

Recording System

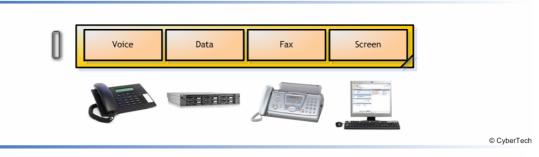
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2.4 Input layer

The input layer of the recording system accepts the inputs from the various sources; these sources may be:

- Voice: digital, analogue or VoIP
 - Data: D-channel info, CDR or CTI
- Fax
- Screens

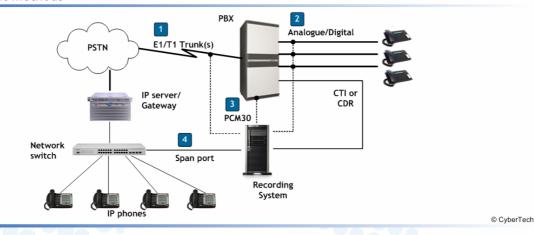
Input layer



The voice input is the most import input of the Recording System. Four types of voice input are accepted:

- 1. Trunk (E1, T1, CAS, DPNSS, Q.SIG)
- 2. Analogue or Digital Extensions
- 3. PBX Recording Port (PCM30/PCM32)
- 4. Span Port (VoIP extensions, SIP)

Input methods



Passive tapping is used for all these inputs. In other words, a 'tap' is placed on the line which does not interfere with the actual information being transported.

Data input is the additional data of a call. It is usually supplied over the same line as voice but in the form of D-channel information. Other sources for call data can be Call Details Records (CDR) or Computer Telephony Integration (CTI).



Fax input can be detected as a special form of voice and can also be stored on the recording system.

The functionality to record from screens is currently being developed and will be available in Q3/2007.

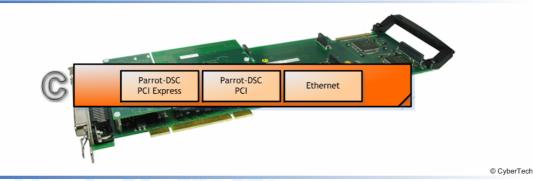
2.2 Converter layer

The converter layer converts the voice input into a voice stream that can be used by the recording software. There are two types of converters:

- 1. a Digital Speech Converter (DSC) card that converts analogue or digital input
- 2. a standard Ethernet card that converts VoIP input

The Digital Speech Converter cards (Parrot-DSC) are developed and manufactured by CyberTech.

Digital Speech Converter



Parrot-DSC cards are modular cards that use PCI or PCI-E baseboards with space for different detection circuit modules:

# modules	Full size	Medium Size	Short Size
PCI	3	n/a	1
PCI-Express	3	2	1

Detection modules are available in 4 versions:

- 1. Analogue (8 input channels)
- 2. Analogue + Beep tone (8 input channels)
- 3. Digital Parallel (8 input channels)
- 4. Digital Serial (4 input channels)
- 5. Trunk (24 T1 or 32 E1 input channels).

By placing 1, 2 or 3 detection on a baseboard (one type per baseboard), many different card configurations are possible:

l size Mediun	n Size Short Size
channels 16 chan	nels 8 channels
channels 16 chan	nels 8 channels
channels 16 chan	nels 8 channels
channels 8 chann	els 4 channels
channels 64 chan	nels 32 channels
	channels 16 chan channels 16 chan channels 16 chan channels 8 chann



See **Appendix A** for a complete list of the tapping cards available.

Each baseboard also contains a 'processor module'. This module contains the licenses for activating the modules, and firmware for configuring the card to the specified PBX extension.

CyberTech has developed specific firmware for almost every available PBX brand available. Since almost every extension type, digital or otherwise, uses a different protocol, there are currently more than 100 firmware protocols available for extension types for the following PBX brands:

Digital Parallel

- Alcatel OmniPCX
- Ascom Ascotel
- Aspect
- Avaya
- Bosch Integral
- DMS-100 (BRI)
- Ericsson
- Fujitsu Coral
- Generic
- Goldstar
- Intertel Axxess
- ISDN2 ETSI/1TR6
- LG Starex-VSP
- Nitsuko DX2E
- Nortel
- Panasonic KX-TD
- Philips/NEC

- Realitis DX 4-wire - Rockwell Spectrum - Selta - Siemens - Tadicom Coral - Toshiba Strata Digital Serial

- Avaya Index (SDX) Ericsson
- Mitel X200/SX2000 Selta
- VoIP - Alcatel - Avaya IP office - Cisco - Mitel - Nortel

- Siemens

See **Appendix B** for a complete list of supported connectivity.

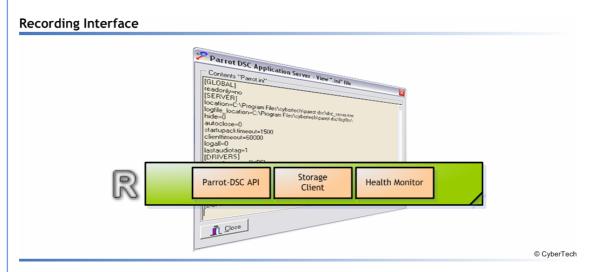
Each firmware protocol converter is able to decode the available data (D-channel). This means that not only can additional data like CLI and dialled number be decoded, but also any information that is displayed on the display of the extension.

For VoIP recording, only a standard (additional) Ethernet card in the chassis is required. The recording interface layer (see 2.3) monitors the IP-stream and detects the VoIP and the associated data packages and call data.

Recording interface layer 2.3

The recording interface layer controls the hardware input sources according to the commands issued by the recording software. This is done with the Parrot-DSC API. A Storage Client prepares the received calls for storage in the database. The Health monitors guards the hardware in the system and sends alarms in case of failures.

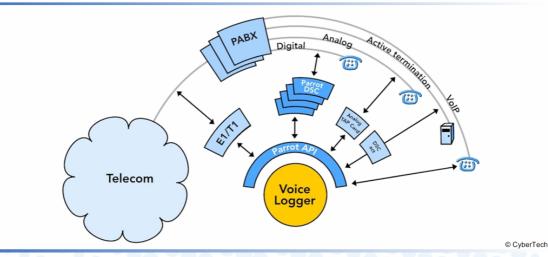




The Parrot-DSC API is developed by CyberTech and is a universal API that can be used for all 4 types of inputs:

- 1. Digital
- 2. Analogue
- 3. Trunk
- 4. VolP

Recorder API



This means that the recording software is completely independent of the input sources. The input sources may even be changed without having to change the recording software. The recording interface API acts as middleware between the hardware and the software. Adding new media in the future as input sources will therefore not influence the software.

2.4 Services layer

The services layer performs the core software features of the recording system. These services run continuously in the system's background and each performs a different activity:

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Recording Services

2.4.1 Storage

The storage service provides online storage of the voice streams received from the various channels. Each received voice stream is stored as a WAV file on a hard disk in the recording system. In addition to the voice stream, additional call data is added at the end of each call to the WAV file.

A database is maintained of all the recorded calls on the system. This MySQL database contains one record for every call.



In addition to the standard fields in the database, 20 additional custom fields may be added. These fields may include additional data received from CDR or CTI connections.

If the 'encryption' option is enabled, all stored calls will be encrypted with the 256 bit Rijndael AES audio encryption. This means the WAV file can only be replayed if the encryption key is available.

The number of hours of recording storage depends on the size of the hard disk and compression used. Below is an example for 3 different hard disk sizes:

80 Gb	180 Gb	250 Gb
HDD	HDD	HDD
2.625	5.906	8.203
200		2003
5.250	11.813	16.406
7.000	15.750	21.875
12.727	28.636	39.773
12.727	28.636	39.773
19.765	44.471	61.765
21.000	47.250	65.625
28.235	63.529	88.235
42.532	95.696	132.911
78.140	17.5814	244.186
	HDD 2.625 5.250 7.000 12.727 12.727 19.765 21.000 28.235 42.532	HDDHDD2.6255.9065.25011.8137.00015.75012.72728.63612.72728.63619.76544.47121.00047.25028.23563.52942.53295.696

Available columns	1
Archive date	
Call type	
Censure list reason	
Censure list reason id	
Channel	
Channel group name	
Channel name	
Channel organisation name	
Compression	
Delete date	
End date	
Index	
Location	
Mark	
Mark name	
Recorder	
Recorder hostname	
Recorder Ip-address	
User first name	
User last name	
Userkey	
	1

2.4.2 Archiving

The archive service archives the calls to the storage media. Several types of storage media are supported:

1. DVD Ram

DVD Ram drives are the most commonly used archive media as they are cheap and widely available. Each DVD Ram can store 4.7 GB.

2. Iomega REV disks

The Iomega REV disks are removable hard disks in a cartridge and offer larger storage capacity than DVD Rams. The cartridges are available in 35 GB and 70 GB versions.

3. Network Attached Storage (NAS)

Any disk that can be reached through a drive letter can be used as archive media. This means that any NAS or SAN that can be accessed by the recording system can store the archived calls.

4. EMC

A special form of media is the EMC Centera, this archive media can also be used as archiving media.

Retrieval 2.4.3

The retrieval service performs the search & replay possibilities.

Users log on to the recording system's core server via a web browser. The core server has a standard web server that handles the user retrieval requests, searches for the required voice files, and sends the audio to the web browser. Audio is played in the web browser using Media Player.





Optional features in the recording system are the 'Replay by Phone' and 'Replay to handset' functions which allow users to use a telephone with DTMF to select a call, and replay the call to the handset.

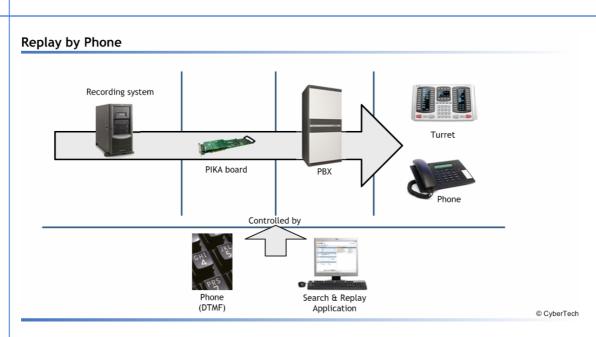












<u>CYBERTECH</u>

In this case, a PIKA board in the recording system is used to stream the audio to the handset.

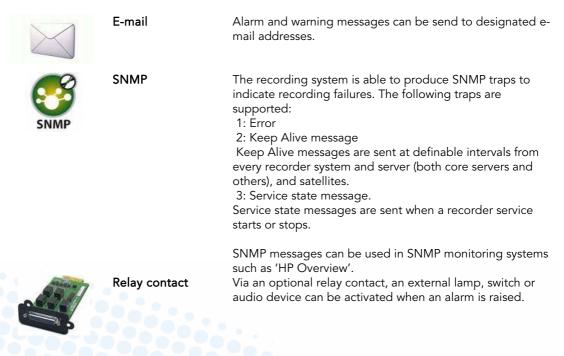
.....

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2.4.4 Health Monitor

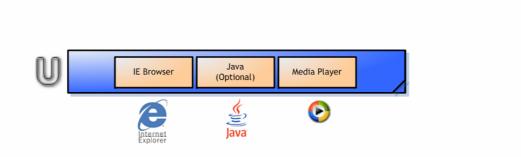
The Monitor Service monitors the systems and gives alarms and warnings. There are several ways to raise alarms:



2.5 User Interface

The user interface allows the user to control the system and perform search and replay actions. It is browser-based, can use Java scripts and standard MS-Windows modules such as Windows Media Player.

User Interface



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This means that any PC workstation with a network connection to the recording system server can access the recordings. The minimal PC Workstation requirements are that it runs MS Internet Explorer software.

Due to the nature of the web browser-based application, the user interface is very easy to use. Each window has a 'Help' button allowing access to additional information.



							*				results	Search
	Rema			Phone n	Direct		CLI Data	Durati		Chan	User handle	Call
		Available		101	Ð		+49 341 8418733	00:01:22	5-12-13 17:39:24	1	Kims_DEMO0	11072
		Unavailable		111	Ð		+32 20 413560	00:02:18	5-12-13 17:38:15	11	Rich_DEMO10	11071
		Unavailable		109			+32 50 870668	00:00:49	5-12-13 17:35:06	9	Chris_DEMO8	1070
		Unavailable		102	+	2	+44 151 18470472	00:01:22	5-12-13 17:25:42	2	Mike_DEMO1	11069
		Unavailable		104			+32 30 384615	00:01:22	5-12-13 17:20:38	4	Bill_DEMO3	1068
		Unavailable		102	-		+34 93 5132139	00:00:00	5-12-13 17:05:53	2	Mike_DEMO1	1067
	1 🥒	Unavailable		107	-		+34 93 8421740	00:00:49	5-12-13 17:02:09	7	Jamie_DEMO6	1066
		Unavailable		115			+43 1 870518	00:00:49	5-12-13 16:57:16	15	Jackie_DEMO1	1065
		Unavailable		111			+46 40 827852	00:01:51	5-12-13 16:54:51	11	Rich_DEMO10	1064
		Unavailable		116			+49 228 2276714	00:01:51	5-12-13 16:52:01	16	John_DEMO15	1063
		Unavailable		109	+		+34 91 1130936	00:01:51	5-12-13 16:48:12	9	Chris_DEMO8	11062
		Unavailable		115	-		+46 8 127716	00:01:22	5-12-13 16:46:23	15	Jackie_DEMO1	11061
		Unavailable		113	-		+46 31 356271	00:00:49	5-12-13 16:45:15	13	Tom_DEMO12	11060
		Available		103			+43 1 856045	00:00:49	5-12-13 16:41:38	3	Car_DEMO2	11059
		Unavailable		112			+49 40 9278067	00:02:18	5-12-13 16:32:07	12	Mike_DEMO11	11058
(>>	(>)		40	10	9	7 8	5 6	3 4	1 2			100
			_		~							
	6					Call details	?				ayer	udio p
					erties	Main prop	1:45.918	3 16:4	2005-12-1			
27	05-12-13 16:42:2	200	End date	12-13 16:41:38	2005-1	Start date			and and an and a start of		the state of the s	
	tgoing	n Ou	Direction	:49	00:00:	Duration					un han han han han han han han han han ha	
	DEMO2	ndle Ca	User handle		3	Channel					2	
~	ark 2		Mark	able	Availa	Status	80% 🔶	Θ		1))))	m Da	00
	ark 2	IN a	магк				1x (+)	8		000		20
				1 856045	+43	CLI Data						

The user interface structure is described in Chapter 5, Software Overview.

2.6 Optional Applications

In addition to the standard user interface, the application layer adds additional functionality to the recording system.



Several applications have been developed for specific markets and/or user groups and are described in Chapter 6.

2.6.1 Financial Institutions

For financial institutions, or any other user group needing instant access to the latest call, the **Last Call Replay Application** gives direct access to the latest calls without having to start the web browser-based Search & Replay application. The Last Call Replay application is described in Chapter 6.3.

2.6.2 Call Centers

For call centres and similar environments, the **Evaluation Application** provides a Quality Management (QM) system that helps assess and improve agent performance by retrieving agent call data and evaluating it against key factors, such as politeness and professionalism, using an online evaluation form. Once assessed, agents can be ranked, provided with feedback and, when necessary, recommended for additional training. In addition, agent activity can be assessed in real time by listening in on calls. This allows supervisors to provide the agent with tips or advice via Instant Messaging, and to take over the call if necessary.

QM systems benefit customers, employees and contact centre managers alike, with the main advantages being in improved efficiency, effectiveness, customer satisfaction and revenue generation. Future developments in call centre QM systems include call flow assessment, the use of speech analytics to mine recorded call data for keywords, and the use of emotion detection. The Evaluation Application is described in chapter 5.6.

2.6.3 Public Safety

TETRA is a combination of group voice communications, mobile telephony and mobile data services. It allows agencies to share information and perform duties as one unified workforce. TETRA is a purpose-built technology

providing major advantages for public safety and security organisations compared to conventional radio systems. It was developed for public safety and security organisations that needed fast one-to-one and one-to-many radio communication of voice and data in their daily work. It forms the basis for communications interoperability between the different agencies involved in incidents. When safety is at stake, being able to respond quickly and efficiently is of vital importance, but it's almost equally important to be able to evaluate incidents, so as to learn from them and make improvements. In this way, incident recording is an essential tool in emergency management. What's more, it can also help in ensuring justice is carried out.

CyberTech has been an official partner of Motorola since 2003 and in 2006 it established an official partnership with EADS. These partnerships are recognition of the reliability and functionality of the solutions for missioncritical environments, such as public safety. What's more a strong relationship with these key suppliers means that CyberTech can work with them to constantly improve the solution offered and further tailor it to the needs of the customer.

The **Incident Replay Application** has been specifically developed for recording missioncritical public safety trunk radio installations.

With so much recorded information, reconstructing a specific situation or retrieving a specific fragment is a complex matter. The recording application not only records all communication, but also registers call data, such as time, the number called, the device number, and so on. This makes it easy to search for specific fragments. What's more, the Incident Replay Application lets users select a time-based graphical representation of the search results. The Incident Replay Application is described in chapter 6.2.









3 Configurations overview

The recording system can be used in many different configurations, depending on the number of locations and channels needed. Below are some example configurations to show how the different components are connected. There are many more configurations possible, but they are all based on the examples given.

The recording system is available in three versions:

- Standalone
- Server/Satellite
- In addition to a Stand alone Server, or a Server of Server/Satellite configuration, a
 - CTI/CDR Server

can be added optionally.

3.1 Stand alone server

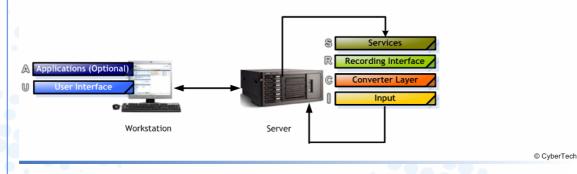
A standalone server is a complete recording system in one chassis. The standalone server contains:

- Hardware
 - Server Chassis
 - Input Cards
- Software
 - Recording Services
 - MySQL Database
 - Web Server

One or more workstations can be connected to the standalone server using a LAN. The workstation contains a:

Web browser

Stand alone configuration



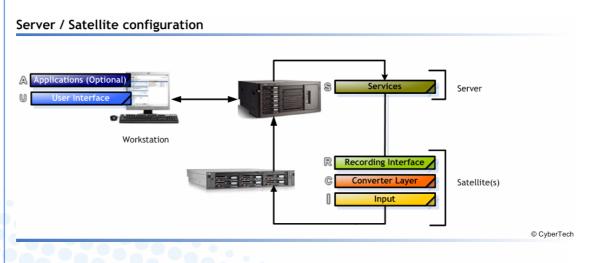
The standalone server software is available in two versions:

- **Myracle:** from 4 to 64 input channels max
- **Pro:** from 8 to ±1200 input channels



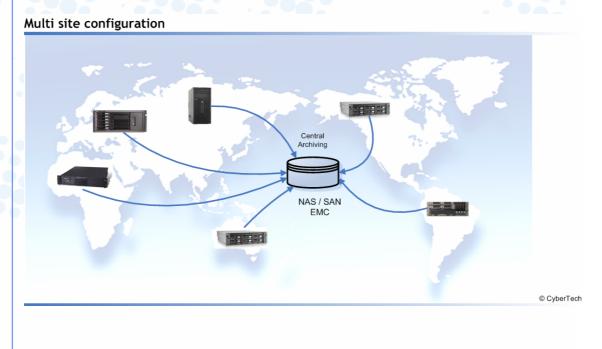
3.2 Server/Satellite

The Server/Satellite configuration consists of a server chassis, and one or more satellite chassis. The server chassis can contain tapping cards with up to a maximum of 64 channels. The satellites can contain tapping cards with up to a maximum of 240 channels per satellite (see Appendix C). The services, the database and the web server are installed on the server while the satellite has only a small satellite application, which is the same as the server application but with a limited number of services activated.



3.3 Multi-site

With a multi-site configuration, the recording system can be installed at several locations, and still maintain a central archiving possibility with all the calls being archived in a central location such as a main site.

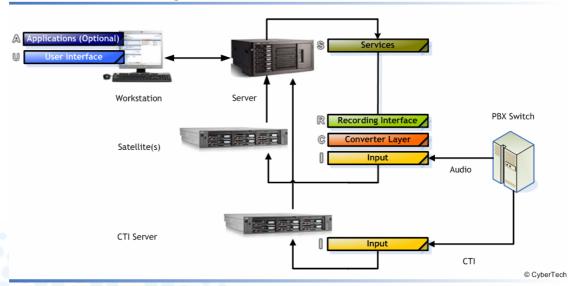




3.4 CTI configuration

By adding a feed with CTI (Computer Telephony Integration) or CDR (Call Detail Records) to the configuration, additional information about the call can be stored in the database.

Server/Satellite + CTI configuration



For the development of CTI and CDR integrations, CyberTech has technology partnerships with:





4 Hardware overview

The recording system can be used with any commercial off-the-shelf (COTS) hardware. Depending on the configuration used, the recording system hardware can either have:

- Standalone configuration
- Server/Satellite configuration

4.1 Stand-alone server configuration

A standalone configuration consists of one chassis with all the tapping cards, the server software, and the web servers.

4.1.1 Desktop PC

A desktop chassis is typically used for smaller configurations, with a maximum of 64 input channels. The selected desktop chassis should have at least enough PCI or PCI-E slots to hold the necessary tapping cards.

4.1.1.1 HP DX2200



Llevel	Cr. a sification
Hardware	Specification
Height	Tower
PCI slots	2
PCI-E slots	2
DVD RAM slots	2
HDD Drive bay	2
RAID	Via additional PCI card
Specifications	Requirement
Software	
Operating system	Win XP Pro / Windows 2003 WE
Database (Core server only)	MySQL Pro
Hardware	
CPU	Intel Celeron 2.8 Ghz
Internal memory	1 GB
Video	Integrated
Sound	Integrated
Storage controller	Optional RAID1 controller (1 PCI slot)
Power supply	Optional, Dual power supply
DVD RAM	Optional, for archiving (LG GSA-4163B)
Network Interface Card	Ethernet TCP/IP
Weight	Approximately 30Kg
Dimensions	17,5x41,6x35,3 (lxdxh)
Options	
Iomega REV Drives	2



4.1.2 Industrial chassis

Instead of a desktop PC, a 19 inch, rack-mounted industrial chassis may be used as a standalone server.

4.1.2.1 Chenbro RM225



Hardware	Specifications
	•
Height	20
PCI slots	3
DVD RAM slots	2
HDD Drive bay	2
RAID	Via additional PCI card
Specifications	Requirement
Software	
Operating system	Win XP Pro / Windows 2003 WE
Database (Core server only)	MySQL Pro
Hardware	
CPU	Intel Pentium 4, 3 Ghz
Internal memory	1 GB
Video	Integrated
Sound	Integrated
Storage controller	Optional RAID1 controller (1 PCI slot)
Power supply	Optional, Dual power supply
DVD RAM	Optional, for archiving (LG GSA-4163B)
Network Interface Card	Ethernet TCP/IP
Options	
Iomega REV drives	2

4.1.2.2 HP ML370



	Constituentions
Hardware	Specifications
Height	50
PCI slots	4
DVD RAM slots	2
HDD Drive bay	6 Hot plug
RAID	Via additional PCI card
Specifications	Requirement
Software	
Operating system	Windows 2003 WE
Database (Core server only)	MySQL Pro
Hardware	
CPU	Intel Xeon 3,4 Ghz
Internal memory	1 Gb – 4 Gb
Video	Integrated
Sound	Optional
Storage controller	Optional RAID1-5, Smart Array 641 (1
	PCI slot)
Power supply	Optional, Dual power supply
DVD RAM	Optional, for archiving (LG GSA-4163B)
Network Interface Card	Ethernet TCP/IP



4.2 Server/Satellite configuration

A server/satellite configuration consists of one chassis which is used for the server software, and one or more chassis for the tapping cards.

4.2.1 Server

Since a core server holds none or few tapping cards, it does not need a lot of PCI slots. It does, however, need the resources to perform the necessary core services.

4.2.1.1 HP Proliant DL380

Hardware	Specifications
Height	30
PCI slots	3
DVD RAM slots	none
HDD Drive bay	6 Hot plug
RAID	Smart array 6i Ultra320 (RAID 1-5)
Specifications	Requirement
Software	
Operating system	Windows 2003 WE
Database (Core server only)	MySQL Pro
Hardware	
CPU	Intel Xeon 3,4 Ghz
Internal memory	1 Gb – 4 Gb
Video	Integrated
Sound	Optional
Storage controller	Integrated
Power supply	Optional, Dual power supply
DVD RAM	Not applicable
Network Interface Card	2x Ethernet TCP/IP

4.2.1.2 HP Proliant DL580



Hardware	Specifications
Height	40 0 0 0 0 0
PCI slots	5+2 (Optional Mezzanine adds 2 PCI-X)
DVD RAM slots	none
HDD Drive bay	4 Hot plug
RAID	Smart array 6i Ultra320 (RAID 1-5)
Specifications	Requirement
Software	
Operating system	Windows 2003 WE
Database (Core server only)	MySQL Pro
Hardware	
CPU	Intel Xeon 3,4 Ghz
Internal memory	1Gb – 4 Gb
Video	Integrated
Sound	Optional
Storage controller	Integrated
Power supply	Optional, Dual power supply
DVD RAM	Not applicable
Network Interface Card	2x Ethernet TCP/IP



4.2.1.3 HP Proliant DL585



Specifications
4U
9: standard 3 PCI-Express (x8) 4 PCI-
Express (x4) 2 PCI-X (100MHz)
none
8 Hot plug 2.5" SATA
Smart Array P400
Requirement
Windows 2003 WE
MySQL Pro
Dual-core AMD Opteron
1Gb – 4 Gb
Integrated
Optional
Integrated
Dual power supply standard
Not applicable
2x Ethernet TCP/IP

4.2.2 Satellite

A satellite is used for tapping cards only and does not run any services or databases. A satellite must contain enough PCI slots to place the tapping cards. For VoIP recording, only 1 PCI slot is required.

4.2.2.1 HP DL360

Hardware	Specification
Height	10
PCI slots	2
DVD RAM slots	none
HDD Drive bay	2 Hot plug
RAID	Smart array 6i Ultra320 (RAID 1-5)
Specifications	Requirement
Software	
Operating system	Windows 2003 WE
Database (Core server only)	MySQL Pro
Hardware	
CPU	Xeon
Internal memory	1Gb
Video	Integrated
Sound	Optional
Storage controller	Integrated
Power supply	Optional, Dual power supply
DVD RAM	Not applicable
Network Interface Card	2x Ethernet TCP/IP



5 Software overview

The user interface has an easy menu structure, with two main functions:

- System installation: to enable the administrator to configure the system
- Recorded calls: to enable the user to search, replay and analyse recorded calls

Access to the software is restricted by a username/password.

Log on			
Main Administ	ration	Free Seat	
Log on using yo	ur user	name and passw	ord.
Log on using yo User name	ur user	name and passw	ord.

If a user account is configured for a free seating agent, the menu 'Free Seat' is visible and can be selected. The user logs on to the recording system using his user name and password. The recorder will automatically link the user name to the right channel on the recorder. All calls made on this channel while the user is logged on will now contain the correct user name and extension.

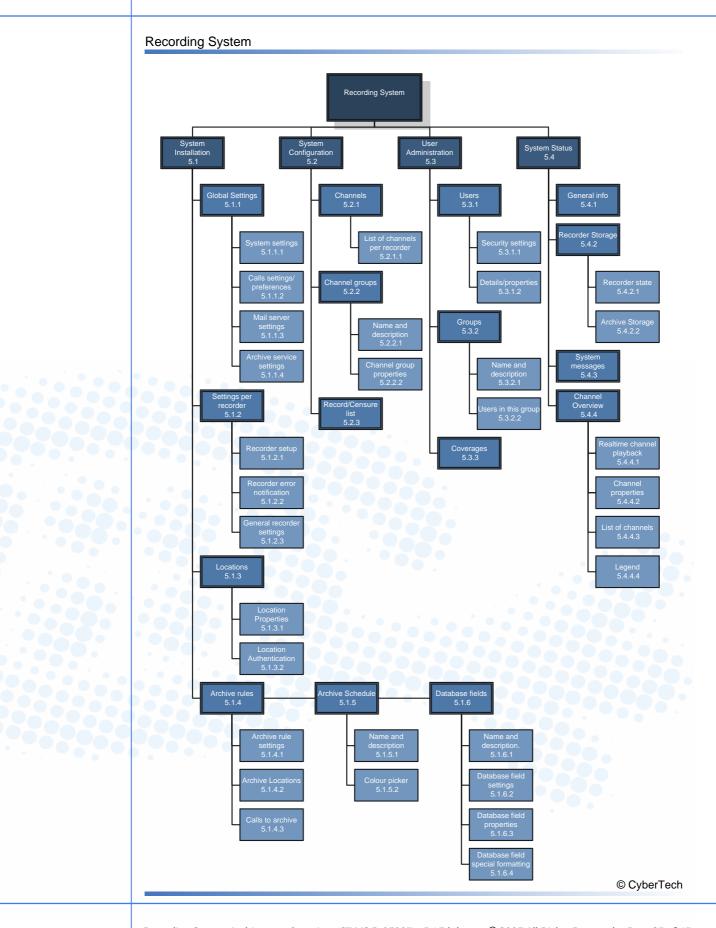
When logging on as free seating agent, the IP-address or PC name of the agent PC is matched with the recorder channel configuration. The Recording System checks if this IP-address or PC name is linked to one of the free-seating channels. If so, this channel is assigned to the user. All calls on this channel will now contain the user settings for this user.

5.1 System Installation

The system installation section is used to set the parameters of the recording system. When the recording system is being installed, a number of variables can be adjusted to configure the system to the desired configuration. Below, follows an overview of all the possible settings.

The parameters of the system installation are usually set once, during the installation of the system. They are divided into six parts:

- 1. Global settings
- 2. Settings per recorder
- 3. Locations
- 4. Archive rules
- 5. Archive schedules
- 6. Database fields



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Recording System Architecture Overview (CT-MS-D-07003) v3.17d.doc • © 2007 All Rights Reserved • Page 23 of 63



5.1.1 Global settings

The global settings of the recording system apply to all the elements of the system.

5.1.1.1 System settings

The system settings are general settings that are valid for the entire system and to all users.

System settings		_
Primary language (Current)	English	
Secondary language	Dutch v1	
Record / censure list	No list in use	~
Audit trail expiration time	Remove audit trail entries after 180 days	~
fax. amount of concurrent web users	100 users at the same time	~
Password retype	Only retype passwords in 'my settings'	~
Session timeout (in minutes)	60	

The following options can be configured:

Option	Value
Primary language	Primary language*
Secondary language	Secondary language*
Record/censure list	Use record/censure list or not
Audit trail expiration time	Remove entries every "" days
Max. amount of concurrent web users	Min. 5 and max. 100 users
Password retype	When to retype password
Session timeout (in minutes)	Time in minutes
Use strict user password	On/Off
Generate user passwords automatically	On/Off

*) Current available languages are:

	suitent available languages	are.			
•	English	•	Dutch	٠	Arabic
•	Spanish	•	German	٠	Turkish
٠	French		Portuguese	•	More on request

All labels and field names are stored in a separate language file. Any new language file can be added with the CyberTech 'online translator'. Users can log on via internet to a special recording system with online translating functionality. By retyping the labels, buttons and text-fields on-screen, a new language file can be created. CyberTech can capture this language file and re-distribute it to any installation requiring this new language.



Calls settings/preferences 5.1.1.2

5.1.1.2 Calls settings/preferences	Calls settings / preferences		2
The call settings and preferences apply to all the stored calls in the recording system. The following options can be configured:	Don't allow calls to be deleted manually Show calls in progress Playback calls from archive locations Minimum call length (in seconds) Default query timeout (in seconds) Default max. number of records to fetch Available call types	V V 0 60 1000 [All]	M
Option	Value		
Allow calls to be deleted manually	On/Off		
Show calls in progress	On/Off		
Playback calls from archive locations	On/Off		
Maximum call length (in seconds)	Time in seconds		
Query timeout (in seconds)	Time in seconds		
Max. number of records to fetch	Number from 1 to 1000	00	
Available call types	Specific type or all		

5.1.1.3 Mail server settings

Mail server settings	© 3
Mail server address (SMTP)	193.168.3.11
Mail server username	webdemo
Mail server password	******
Default mail from-address	noreply@cybertech-telecom.nl
Default mail-address(es) for system messages	webdemo@cybertech.nl

The mail server is used for sending alarms and warnings. The following options can be configured:

Option	Value
Mail server address (STMP)	Address of desired mail server
Mail server username	Username
Mail server password	Password
Default mail from address	Default 'from'-address
Default mail address/addresses for system	One or more e-mail addresses
messages	

5.1.1.4 Archive service settings

The general settings for the archiving services are set here. The following options can be configured:

Archive service settings		?
Autostart archive service		
backup run start hour	00:00	~
Archiving interval	Every 15 minutes	~
Database backup interval	Every day	~
Overwrite existing database backups		
Enable beeping on archive media full		

Option	Value
Autostart archive service	On/Off
Backup run start hour	Hour to start backup automatically
Archiving interval	From every 15 minutes to 24 hours
Database backup interval	From every day to every 7 days
Overwrite existing database backups	On/Off
Enable beeping on archive media full	On/Off



5.1.1.5 Encryption settings

This provides the general settings for encryption. The following options can be configured:

Encryption settings	
Encrypt calls	
Encryption key	

Option	Value	
Encrypt calls	On/Off	
Encryption key	Characters	

When encryption is turned on, all calls will be stored with **256 bit Rijndael AES** audio encryption. The encryption key must be used in every recording system that replays calls, including the offline PC Replay Station application.

MD5 fingerprinting enables recorded calls to be used as admissible evidence in a court of law. It checks that audio files stored on the recorder have not been altered from the original by placing a unique digital signature on the file when it is recorded. If a file is changed in any way, the unique key will also change and the user will be made aware when replaying the call that it is different from the original recording. Fingerprinting cannot be turned on or off.

5.1.1.6 SNMP server settings

These are SNMP server settings for	SNMP server settings
receiving SNMP traps. The following	SNMP server address
options can be configured:	
Option	Value
SNMP server address	IP address

SNMP (Simple Network Management Protocol) is used to send the following types of message:

- 1. Error messages
- 2. Keep Alive messages
- 3. Service state messages

The SNMP messages can be processed with SNMP monitoring systems such as 'HP Overview' (not included).



5.1.2 Settings per recorder

In addition to the general system settings for the recording system as a whole, settings can also be configured for each individual recorder that is part of the recording system. An important aspect of this is the reporting of **error messages** which can be sent in five different ways:

- By using the buzzer on the recording server hardware
- By using SNMP traps
- By examining the event logs
- By e-mailing directly to the system administrator
- By using the alarm relay contacts on the Auxiliary Alarm Card (optional)

5.1.2.1 Recorder setup

This configures the initial setup of the recorder parameters. The following options can be configured:

Recorder setup		3
Audio files location		~
Start channel	1	
Autostart recorder	M	

Option Value		
Audio files location	Drive letter & directory*	
Start channel	Channel Number	
Autostart recorder	On/Off	

*) location can be any media that can be accessed through a drive (e.g. A: B: C: ...)

5.1.2.2 Recorder error notification

A log file lists all the actions, warnings and errors. The parameters for the log file and alarms can be configured using the following options:

Recorder error notification	
Logfile expiration time	Remove logfiles after 14 days
Location of the logfile	C: Vogfiles
Warning issued if remaining diskspace less than	10%
Disk marked full if remaining diskspace less than	2%
'Disk full'-error handling	FIFO-mode
Enable beeping on serious error	
SNMP keep alive interval	Disable SNMP keep alive

Value
Expiration time of log file
Where the log file is located
Percentage
Percentage
Mode (FIFO, LIFO)
On/off
Disable or enable



5.1.2.3 General recorder settings

General recorder settin ?) These are the general settings for the Enable 'Automatic Gain Control' on record recorder. The following options can be Inlaw A-law ¥ configured: Compression type GSM (13.2 kbit / sec) ~ Option Value Enable 'Automatic Gain Control' on record On/Off Inlaw A or U law Compression type* Compression type

*) in addition to uncompressed 64Kb/s, the following compression types are available:

ADPCM 32Kb/s

GSM 13Kb/s

ADPCM 24Kb/s

- Fast GSM 13Kb/s
- True Speech 8.5Kb/s
 - Speex 8Kb/s
- Speex 5.95Kb/s
- Speex 3.95Kb/s
- Speex 2.15Kb/s

5.1.3 Locations

One or more locations can be created for archiving calls.

5.1.3.1 Location properties

Each location has a name and properties. The following options can be configured:

Option	Value
Alias (for primary language)	Alias name
Alias (for secondary language)	Alias name
Location	Location drive letter & directory
Auto format new (blank) media	On/off

Location prope Alias (English) Alias (Dutch v1)

Location

Auto-format new (blank) media

*) location can be any media that can be addressed by a drive (e.g. A: B: C: ...)

Supported archive locations are:

- DVD-RAM drive (4,7 GB)
- Iomega drive (35 GB or 70 GB per disk) →
- Network Attached Share (NAS) or SAN
- EMC Centera (via CUA Centera Universal Access)

5.1.3.2 Location Authentication

If log-in to an archive location is needed, the following parameters can be configured:

account	
sword	
sword (retype)	

Option	Value	
User account	User name	
Password	Password	

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Recording System Architecture Overview (CT-MS-D-07003) v3.17d.doc • © 2007 All Rights Reserved • Page 28 of 63



5.1.4 Archive rules

Through the provision of network-attached storage technology, the recording system can archive recordings to a physically separate location from the recording servers, thus enabling a high degree of physical security in the event of a disaster.

The recorder archives calls to a physically separate location on the basis of the archive rule settings and the status the calls are given. This may be on a per channel basis or associated to the call mark.

5.1.4.1 Archive rule settings

These are the general settings of the archive rule. The following options can be configured:

Archive rule settings			?
Activate archive rule			
Archive options	Create Html index-file	Create database backup	
Auto-erase calls	Don't auto-erase existing medium		 •

Option	Value
Activate archive rule	On/off
Archive Options	Create HTML index file On/off
	Create database backup On/off
Auto-erase calls	Select days or years

5.1.4.2 Archive locations

The archive locations can be used in either sequential or mirrored mode. The following options can be configured:	
	Archive mode
Option	Value
For all archive locations	Mirrored or Sequential

5.1.4.3 Calls to archive

The calls to be archived can be selected based on marking and/or channel IDs. The following options can be configured:

Option	Value
Marks	Select single, multiple or all marks
Channel id's	Select single, multiple or all channel IDs



5.1.5 Archive schedule

Option

Name (primary language)

Description (primary language)

The archiving rules are executed using one or more archiving schedules.

5.1.5.1 Name and description

Each rule has a name and description. The following options can be configured:

Description of the archiving schedule

17

5.1.5.2	Activate schedule	

Archive schedules can be activated using the following options:

Activate archive schedule for this	1	Archive calls	At the next archive run	
mark		Delete calls	Never	(
		Delete call data	Never	1

Option	Value
Activate archive schedule	On / Off
Archive calls	Next archive run / Older than <time period=""></time>
Delete calls	Never / Next archive run / Older than <period></period>
Delete call data	Never / Next archive run / Older than <period></period>

Name and description



5.1.6 Database fields

In addition to the standard database fields, up to 20 additional custom fields can be added to the database. These fields can be filled by

5.1.6.1 Name and description

Each custom database field has a unique name and description. The following options can be configured:

Name and description		1 ?
Name (English)	Archive date	
Description (English)	Date the call was archived	~
		~

2

Option	Value
Name	Name for the new database field
Description	Description for the new database field

5.1.6.2 Database field settings

 Each custom field is specified. The following options can be configured:

 Database field settings
 Column CVSARC Size 19
 Defeute
 Defeute

Option	Value
Column	Name
Size	Number
Туре	Date/Time, Text, Number
Default	Value

5.1.6.3 Database field properties

Each custom field has settings. The following options can be configured:

Option	Value
Searchable	On/Off
Sortable	On/Off
Editable	On/Off*
Visible	On/Off
Scalable	On/Off
Coverage based on content	On/Off*

*Can only be modified before the first save



5.1.6.4 Database field special formatting

The following options can be configured:

Databas	e field special formatting	2
Lookup	list	≻
	Value	

Special formatting

Option Lookup list

5.2 System configuration

One of the primary functions of the recording system is managing and administering the system. All of the settings available on any recorder in the configuration can be administered and configured using the web-based user interface. Within the system configuration part of the recording system, channels and groups for a specific recorder can be configured and maintained.

5.2.1 Channels

Each recorder has at least 4 channels and a maximum of 1000 channels. The number of channels is determined by the number of activated licenses in the Parrot-DSC cards.

5.2.2 Channel groups

One or more channels can be combined in a channel group.

5.2.2.1 Name and Description

Each channel group has a name and description. The following options can be configured:

Option	Value
Name	State a name for the new channel group
Description	State a description for the new channel group



5.2.2.2 Channel group properties

Each channel group can have an alias that can be used by external applications, and has one or more channels assigned. The following options can be configured:

Channel group properties	?
Alias used by external applications	
Channel id's	>

0654564534

Option	Value
Alias used by external applications	Alias name
Channel id's	Single, multiple or all channel IDs

5.2.3 Record/censure list

An unlimited list of telephone numbers (CLI) can be entered. The list of telephone number can be used as a:

- Record list: only these telephone numbers will be recorded
- Censure list: none of these telephone numbers will be recorded

5.2.3.1 Phone number settings

1

Details can be set for each phone number. The following options can be configured:

5 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Column	11 CVSNBR 5 CVSPHN
	Contact person	Jansne
	Direction	[AI]
	Store call data	V
Option	Value	
Number	Telephone number	
Column	One or more colu	mn names
Contact person	Name	
Direction	In, Out, All	
Store call data	Yes/No	

Phone number set

Numbe



5.3 User administration

The user administration maintains those users with access to the recording system.

5.3.1 Users

Each user has an extensive profile that determines access privileges.

5.3.1.1 Security settings for user account admin

In this section, a password for each user can be set and behaviour determined for when access is violated.

Application access	Access granted	
Password	••••••	
Password (retype)	••••••	
Password expiration date	never	~
Number of login attempts allowed	Unlimited	~
Login attemps exceeded behaviour	Disable account for 15 minutes	~
User account expiration time	never	~
User account expired behaviour	Disable account	~

The following options can be configured:

Option	Value	
Application access	Access mode*	
Password	Password	
Password expiration date	Period of time	
Number of login attempts allowed	Number of attempts	
Login attempts exceeded behaviour	How to disable account	
User account expiration time	Expiration time	
User account expired behaviour	Expired behaviour	

5.3.1.2 Details/properties for user account admin

Each user has general properties.	Details / properties for user account admin		
	User name	admin	
	First name	administrator	
	Last name		
	Email address		
	Seating	No seat	
	Fixed seating channel	Chn. 01 🗸	
	Free seating extension		
In this section, the following options can be configured:	Group	Administrators	
	User language	Dict. 0: [ENG] English	
	Include user in evaluation	Reporting color to use	
Option	Value		
Username	User name		
First name	First name		

Username	User name	
First name	First name	
Last name	Last name	
E-mail address	E-mail address	
Seating	Select between no, fixed and free seating	
Fixed seating channel	Only applicable if seating is fixed	
Free seating extension	Only applicable if seating is free	
Group	User group	
User language	Language	
Include user in evaluation	On/Off select mark colour(optional)	

With the free seating option, an extension number can be linked to a user name.

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5.3.1.3 Access permissions

Access permission for each menu item of the software can be set according to the following configurations:

global settings	Inherit setting from user's group: "Deny access"	~
settings per recorder	Inherit setting from user's group: "Deny access"	~
locations	Inherit setting from user's group: "Deny access"	~
archive rules	Inherit setting from user's group: "Deny access"	~
archive schedule	Inherit setting from user's group: "Deny access"	~
database fields	Inherit setting from user's group: "Deny access"	~
SYSTEM CONFIGURATION	set all to <u>deny</u> <u>inherit</u>	grant
-hl-	Inherit setting from user's group: "Deny access"	~
channels		G
channels channel groups	Inherit setting from user's group: "Deny access"	~

Option	Value
My Account	
My settings	Deny / Inherit / Grant
System Installation	
Settings per recorder	Deny / Inherit / Grant
Locations	Deny / Inherit / Grant
Archive rules	Deny / Inherit / Grant
Archive schedule	Deny / Inherit / Grant
Database fields	Deny / Inherit / Grant
System Configuration	
Channels	Deny / Inherit / Grant
Channel groups	Deny / Inherit / Grant
Record / censure list	Deny / Inherit / Grant
User Administration	Deny / Inherit / Grant
Users	
User details scope	Deny / Inherit / Grant
User permissions scope	Deny / Inherit / Grant
User groups	Deny / Inherit / Grant
Coverages	Deny / Inherit / Grant
System Status	
General info	Deny / Inherit / Grant
Recorder storage	Deny / Inherit / Grant
System messages	Deny / Inherit / Grant
Channel overview	Deny / Inherit / Grant
Audit trail	Deny / Inherit / Grant
Evaluation	
Schedule	Deny / Inherit / Grant
Projects	Deny / Inherit / Grant
Evaluate	Deny / Inherit / Grant
Review	Deny / Inherit / Grant
Reports	Deny / Inherit / Grant
Recorder Calls	Deny / Inherit / Grant
Call search	
Column selection	Deny / Inherit / Grant
Call listing	Deny / Inherit / Grant



Inherit setting from user's group: "Not allowed

5.3.1.4 Call permissions

Permissions for all call activities can be set according to the following configurations:

according to the following configurations:	Play calls	Inherit setting from user's group: "Not allowed"	~	
	Edit call remarks	Inherit setting from user's group: "Not allowed"	~	
	Change marks afterwards	Inherit setting from user's group: "Not allowed"	~	
	Download calls	Inherit setting from user's group: "Not allowed"	~	
	Mail calls	Inherit setting from user's group: "Not allowed"	~	-
	Restore calls	Inherit setting from user's group: "Not allowed"	~	
	View call's audit trail	Inherit setting from user's group: "Not allowed"	~	
	CHANNEL OVERVIEW	set all to <u>not allowe</u>	<u>id inherit</u>	
	Channel properties	Inherit setting from user's group: "Not allowed"	~	~
Option	Value			
Recorded calls	Not allowed /	inherit / same as 'access calls'		
Access calls	Not allowed / inherit / same as 'access calls'			
Play calls	Not allowed / inherit / same as 'access calls'			
Edit call remarks	Not allowed / inherit / same as 'access calls'			
Change marks afterwards	Not allowed / inherit / same as 'access calls'			
Download calls	Not allowed /	inherit / same as 'access calls'		
Mail calls	Not allowed / inherit / same as 'access calls'			
Restore calls	Not allowed / inherit / same as 'access calls'			
View call's audit trail	Not allowed / inherit / same as 'access calls'			
Channel overview				_
Channel properties	Not allowed /	inherit		
Real time playback	Not allowed /	inherit		

5.3.2 User groups

Users can be combined into user groups.

5.3.2.1 Name and description

Each user group can have a name and description. The following options can be configured:

Name and description		1 ?
Name (English)	Administrators	
Description (English)	Built-in account for administration of the system	~
		V

Option	Value
Name	User group name
Description	Description of selected user group

5.3.2.2 Access and call permissions

Access and Call permissions can be set for user groups in the same way as they are set for individual users. See 5.3.1.2 and 5.3.1.4.

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5.3.3 Coverages

Coverages are a combination of users, channels and/or extensions. They can be used to give certain users or groups of users the same access to recorded calls.

Overview of all coverages	•					
Coverage name	🔺 Туре					
[Everybody]	Fixed					
[Everyone in my group]	Fixed					
[Myself]	Fixed					
Checker	Custom	9 X				

verview of all coverages

Channel-based cover

Extension-based coverage

neral version information

5.4 System status

With the systems status overview, detailed information on the current status of the recording can be retrieved.

5.4.1 General info

The general information section provides details of:

- Installed version numbers
 - DLL version numbers
 - Dictionary information
 - Installed licenses

5.4.2 Recorder storage

5.4.2.1 Recorder & Archive media

The recorder and archive state provide an overview of the status of

- Online storage media
 - Archive media



5.4.3 System messages

An overview of all system messages can be retrieved from the system. Messages can then be transferred to other applications using standard clipboard functions.



2

5.4.4 Channel overview

The channel overview gives an overview of all the channels in the recording system.

5.4.4.1 Real-time channel playback

Each individual channel can be monitored in near real time. There is a 2-second delay.

Realti	ime channel playback	?
	Click on the speaker to start monitoring channel 1.	

5.4.4.2 Channel properties

	enanner properties			
The channel status of each individual	Selected channel	1 / recorder 1 (WEBDEMO)		
channel can be changed and manual	Channel status	Enabled channel (always on)		~
recording started and stopped. The following options can be configured:	Start recording	>	10:00	~
lonowing options can be configured.	Stop recording	>	10:00	~
		1	Cancel	ок
Option	Value			
Channel status	Enable / Disable			
Start recording	Date & time			
Stop recording	Date & time			

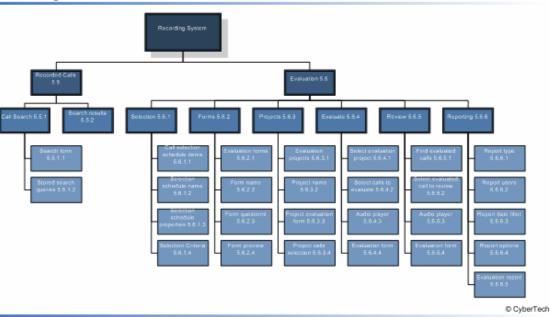
Channel properties



5.5 Recorded calls

All recorded calls are stored as WAV files (encryption is optional), and all call data is stored in the MySQL database on the server. The Recorded Call and Evaluation menus search and replay calls and, optionally, allow calls to be evaluated.

Recording Overview



5.5.1 Call search

All recorded calls are stored as WAV files (encryption is optional), and all call data is stored in the MySQL database on the server. The Recorded Call and Evaluation menus search and replay calls and, optionally, allow calls to be evaluated.

my account	system installation	system configuration	user administration	system status	evaluation	recorded calls	quit
calls search	column selection calls	: listing					



5.5.1.1 Search form

The recording server supports web-based search and replay. The associated browser enables the user to enter a number of search criteria which are then used to return a list of matching call records. Users can search the calls database by channel name, the date and time of the call, the caller's number, the dialled number, the call direction and call marks.

🖌 Date span						
Selection	Call	anade last VVEE	к			~
₩ Call						
Call id Call status	and a	Recording Unavailable Available	र द	Archived On medium Restored	Call type	VOX VOX
→ User deta	ls					
→ Duration						
+ Remarks						
+ Connectiv	ity					
 Number ir 	fo (CLI)					
Marks						

Option	Value
Date span	Date period
Call	Call ID, status and type
User details	User name and criteria to look for
Duration	Duration period
Remarks	Keywords
Connectivity	Channels, extensions, in and/or outgoing calls
Number info (CLI)	Keywords
Marks	Select a mark

5.5.1.2 Stored search queries

The stored search queries provide an overview of the saved search queries. By clicking the query for fast call searching is re-run.

Stored search queries										
Query name	Shared	Created	Owner							
Default query: Calls made last week	~	2006-03-22								
Example: All 555-1234 calls in Q1 2005	~	2006-03-22								
Example: All long incoming calls to Mike Johnson	~	2006-03-22								
Example: Incoming calls on channels 1-10	✓	2006-03-22								
Example: Outgoing calls with mark 0 in the last month	~	2006-03-22								
Show last 1000 calls	✓	2006-03-23	admin							

The calls which meet the selection criteria appear in the call overview window. The functions that are available depend on the rights given. They may include Listen to call, Add note to call, View notes to call, Remove call, Store call, and E-mail call.



5.5.2 Search results

This window shows the results of a query. Select a call to commence playback.

- 000			100 C 100								-	No. of Concession, name			or other distances		eauth	Searchr
	Birms-	Status	Mathew		E Print	- 151				CI IS		NUMBER OF		t date	Start	Chan-	Sieer hendle	Call_
	1.1	Available			122	10			813214	+34 91	£	00:01:22	212.47	6-03-21	2006-0	30	Sandra_DEM02	1533202
	1.0	Available			101	9			24615	+31 2 6	6.1	00:01:51	21:28:24	6-03-21	2006-0	9	Car_DEMO0	1533199
	3.1	Available			113				380241	+34 93	6	00.01.51	20.45.36	6-03-21	2006-0	21	Charle_DEMO	1533197
	4.1	Available			107	+5			6238	+32.26	6	00.01.51	20.21:07	6-03-21	2006-0	15	Jackie_DEMO6	1533195
	2.1	Available			138	-			595463	+43 663	6	00:00:49	20.08.57	6-03-21	2006-0	45		1533193
	1_0	Available			102	-8			37620	+31 9.7		00:00:49	9.58-51	6-03-21	2006-0	10	Kins_DEMO1	1533192
	4.0	Available			108	-			0522013	+49 21	() (00:01:51	19:56:46	6-03-21	2006-0	.16	Joser_DEM07	1533191
	6 .*	Available			127				303999	+49.34	6	00.01.51	19:50:50	6-03-21	2006-0	35	Sandra_DEMO2	1533190
		Available			101	10			6744	+45 40	6	00:01:51	19.48.30	6-03-21	2006-0	9	Car_DEMO0	1533189
		Available			130				8098458	+49-51	6	00.00.49	18.46.25	6-03-21	2006-0	38	Kins_DEM029	1533182
	2.1	Available				-			13820446	+44.14	6.1	00.01.51	8.44.21	6-03-21	2006-0	6		1533181
		Available			110	+			094349	+34.95		00:01:51	10:30:03	6-03-21	2006-0	18	EM_DEMOS	1533180
		Available			115				0055	+4318		00:01:51	18.33.29	6-03-21	2006-0	23	Car_DEMO14	1533178
		Available			106	-			60952996	+44 15		00:01:51	18:30:20	6-03-21	2006-0	14	Kins_DEMOS	1533177
	3.1	Available			114				951476	+34 95		00:01:51	10:24:45	6-03-21	2006-0	22	EM_DEMO13	1533176
		Available							81021	+32.40		00:00:49	1819.24	6-03-21	2006-0	1		1533175
		Available			133	-			6689399	+44 13	£ I	00:01:22	18.18:04	6-03-21	2006-0	41		1533174
	1.1	Available			133				90980053	+44 15	6	00:02:18	B1244	6-03-21	2006-0	41		1533172
000		45	10	9			7	6	5		3	2	1				14-	No.

The audio player enables calls to be played back. This may be through an external speaker, through the sound card on a PC connected to the WAN or LAN or, as an additional option, through a telephone on the desktop.

	2006-3-21	
	C. In the standard s	 ÷
A suspicious man found		~~

The audio player has the following options:

Option
Play / Pause / Stop
Forward / Backward
Set Loop
Add / Edit comments
Change time display format
Set Volume
Set Speed

The playback window illustrates how the user has full control of audio replay, ranging from simply starting and stopping playback to more advanced control such as adjusting playback speed without pitch distortion. The call can also be sent as a .WAV file to a remote location.

Start date Duration Channel	tion 00:01:22 Direc		2006-03-21 22:14:09 Incoming Sandra_DEMO2	
Status	Available	Mark	Normal calls	~
CLI Data	+34 91 1813214			

The replay application also enables the user to transcribe free text to each of the calls. Any text which has been annotated to the call can then be used as search criteria.



5.6 Evaluation

The evaluation application is integrated into the search & replay application. Using a separate menu, the calls for evaluation can be selected, evaluated and reviewed. A report module is available for generating individual, group or company reports.

my account	system installation	system configuration	user administration	system status	evaluation	recorded calls	quit	
selection for	ms projects evalua	te review reporting						

The evaluation application consists of 6 parts:

- 1. Selection
- 2. Forms
- 3. Projects
- 4. Evaluate
- 5. Review
- 6. Reporting



5.6.1 Selection

In the selection part, the calls that need to be evaluated are selected from all the recorded calls.

5.6.1.1 Selection schedule name

	Selection schedule	name 🧿
Each schedule for selecting calls	Schedule name	Schedule_demo
is given a name.		
Option	Va	alue
Schedule name	St	ate a schedule name

5.6.1.2 Selection schedule properties

The parameters for selecting the	Selection schedule	properties	?
calls can be set using the following configurations:	Schedule active		
tonowing configurations.	Limit daily selection	C calls per user	-
	Mark found calls	[don't mark]	•
	Calls expire after	2 weeks	
Option	Valu	e	
Schedule active	Enak	ble/Disable	
Limit daily selection	Max	. number of calls per user/day	
Mark found calls	Yes/	No	
Calls expire after	Time	e period	



5.6.1.3 Selection Criteria

Selection criteria are used for the query of the search. A call selection is based on date, weekday & hour, user or user group, duration, direction, CLI data and mark.

The following options can be configured:

Start date	200			>		End			107-1	01-01		>													
Call selection	n bas	ed	on v	vee	kda	y ani	d ho	ur																	
Recording hours		00	01	02	03	04	05	86	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
	MO																								
	TU																								
	WE																								
	TH																								
	FR																								
	SA																								
	su																								
	SA																								

Option	Value
Call selection based on date	Date period
Call selection based on weekday and hour	Weekday and hour periods
Call selection based on user or user group	User or user group
Call selection based on duration	Time period
Call selection based on direction	Incoming/outgoing
CLI data	Keywords
Mark	Single or multiple marks

5.6.2 Forms

Electronic forms are used to rate the performance of an agent. Each form is made up of a series of sections and questions, with each section and question carrying an individual weighting in the total score.

5.6.2.1 Form name

Each form is given a name.	Form name		0
	Form name	Call Screening Evaluation Form	
Option		Value	
Form Name		Name	

5.6.2.2 Form questions

The questions are grouped into sections with each question having 2, 5 or 10 possible answers with minimum and maximum values (e.g., using words like Yes/No, Bad/Good or numbers (1...10). There is no limit to the number of questions or sections. Each section and question is weighted in the total score.

	Compliance	
1	1.1 Attitude - Rudeness	10 answers
2	1.1 Attitude - Inappropriate Language	10 answers
3	1.2 Legal Scripting - Payment Script	10 answers
4	1.2 Legal Scripting - Data Protection	5 answers
5	1.3 Missell - Deliberate Missell Of Product	2 answers
¥ 2:0	luality	
1	2.1 Salutation - Agents Name	2 answers
2	2.1 Salutation - Telephone Number	2 answers
3	2.1 Salutation - Affinity Partner/Salutation	2 answers
4	2.1 Salutation - Address/Postcode/Pol. No.	2 answers
5	2.1 Salutation - Home Owner/Domestic	2 answers
6	2.1 Salutation - Confirmed DMC	2 answers
7	2.2 Attitude - Rudeness	2 answers
8	2.2 Attitude - Inappropriate Language	2 answers
9	2.3 Product Advice - Closing Script (AP specific)	2 answers

CYBERTECH C

5.6.2.3 Form preview

Each question in the form has a score bar. The score is dragged to the required positions using a mouse. The score is re-calculated each time a question is answered.

Compliance (+-)	, in the second s
01 1.1 Attitude - Rudeness (+-)	
1 10	2
olick or drag here to set a value	
02 1.1 Attitude - Inappropriate Language (+)	
1 10	
olick or drag here to set a value	
03 1.2 Legal Scripting - Payment Script (+-)	
1 10	
olick or drag here to set a value	
04 1.2 Legal Scripting - Data Protection (+)	
1 5	
olick or drag here to set a value	
0.5 1.3 Missell - Deliberate Missell Of Product (-)	
This is a preview of the form. No actual evaluation is being made.	SCORE (SO FAR
This is a preview of the form. No actual evaluation is being made.	NI/A

5.6.3 Projects

Each evaluation project consists of three parts:

- The selection schedule
- A form
- The assigned project evaluators

5.6.3.1 Project name

Each project is given a	Project name		0
name. The following	Project name	Evaluation 1	
options can be configured:	Assigned project evaluators	133,134,138	>
Option		Value	
Project Name		Name	
Assigned project evaluators		Selected user(s)	

5.6.3.2 Project evaluation form

Each project is	Project evaluation form	0
assigned a form. The	Evaluation form	Call Screening Evaluation Form preview
following options can be configured:	You are viewing an existing made within this project.	project. The project form can not be changed as evaluations have already been
Option		Value
Evaluation form		Evaluation form name



5.6.3.3 Project calls selection

One or more selection schedules can be assigned to the project.



5.6.4 Evaluate

The evaluation starts when an evaluator selects a project that is assigned to them.

5.6.4.1 Select evaluation project

Here, a project can be selected	Select evaluation pr	oject	
for evaluation.	Evaluation project	Project1	
Option		Value	
Evaluation project		Project name	

5.6.4.2 Select calls to evaluate

From the list of calls generated by the selection schedule, the evaluator can select a call to evaluate.

e ?		ls left to evaluate) 🚬	3706 cal	to evaluate (28	Select call t
	Cli data	User		Call Date	Call ID
1	+49 341 474678	Tom_DEMO4	09:19	2005-01-03	1242189
	+49 341 474678	Tom_DEMO4	09:28	2005-01-03	1242203
	+49 341 474678	Tom_DEMO4	11:23	2005-01-03	1242377
	+46 31 391201	Tom_DEMO4	12:20	2005-01-03	1242458
1	+49 421 9773600	Tom_DEMO4	14:44	2005-01-03	1242661
	+49 421 9773600	Tom_DEMO4	15:01	2005-01-03	1242691
	+32 26 291547	Tom_DEMO4	16:24	2005-01-03	1242829
L	+49 421 9773600	Tom_DEMO4	16:29	2005-01-03	1242840
	+31 81 3916521	Tom_DEM04	16:58	2005-01-03	1242890
	+34 95 7703850	Tom_DEMO4	11:43	2005-01-04	1243369
	+49 40 275837	Tom_DEMO4	12:04	2005-01-04	1243393
	+49 351 1145692	Tom_DEMO4	14:30	2005-01-04	1243584
_	+49 351 1145692	Tom_DEMO4	14:54	2005-01-04	1243615
	+32 24 942703	Tom DEMO4	16:44	2005-01-04	1243802

5.6.4.3 Audio player

When a call is selected for evaluation, the standard integrated audio player will play the call.



5.6.4.4 Evaluation form

The evaluator can complete the evaluation form while listening to the call. The score is re-calculated automatically after each question.

After completing the form, the data is saved in the database. The next call from the list can then be selected for evaluation.

	Introduction (+-)		
		on prior to receiving call (+)	
	Low	High	
		ick or drag here to set a value	
02	Adherence to agre	ed call opening? (+-)	
	O No	O Yes	🔘 N/A
	Probing Skills (+-)		
01	Identification of re	ason for call (questioning) (+-)	
	O No	O Yes	🔘 N/A
02	Listening Skills (+-)	
	Low	High	
	cli	ick or drag here to set a value	
03	Ability to summari	se details obtained to check accurancy? (+-)	
	Low	High	
	cl	ick or drag here to set a value	
	Attitude (+-)		
01	Ability to offer solu	itions and recommendations? (+-)	
	Low	High	123
	cl	ick or drag here to set a value	🔘 N/A
02	Positivity and Jarg	on (+-)	
	Bad	Good	-
	cli	ok or drag here to set a value	🔘 N/A
		l #1242890 (1/3/2005 4:58:20 PM) : Black (Tom_DEMO4).	SCORE (SO F
		Cancel Save changes	Save and Next

2

¥

~

≻

Find evaluations

5.6.5 Review

Once the evaluations have completed, the results can be reviewed.

5.6.5.1 Find evaluated calls

The calls that need to be reviewed after evaluation can be found according to a variety of parameters:

10000	Find evaluated calls	
	Evaluation project	[all evaluation projects]
	Select date span	[All evaluation data]
	From users	-

Option	Value
Evaluation project	Project name
Select date span	Date(s)
From users	User(s)



5.6.5.2 Select evaluated call to review

From the list of calls, a call can be selected for review. Once the call has been selected, it will be replayed using the standard audio player. The evaluation form can also be viewed, but the data in the form can no longer be modified.

Call ID	Evaluation d	late 💌	User	Score	
1531978	2007-01-08	15:48	Tom_DEMO4	7.73	^
1242661	2006-12-14	09:46	Tom_DEMO4	7.43	Π
1242840	2006-12-12	09:14	Tom_DEMO4	5.19	
1242829	2006-12-12	09:13	Tom_DEMO4	8.38	
1533150	2006-11-15	17:17	Tom_DEMO4	4.95	Ξ
1533085	2006-11-15	17:16	Tom_DEMO4	8.56	
1532740	2006-11-15	17:16	Tom_DEMO4	8	
1532727	2006-11-15	17:15	Tom_DEMO4	7.94	_
1532309	2006-11-15	17:14	Tom_DEMO4	8.17	_
1532261	2006-11-15	17:13	Tom DEMO4	6.61	~

5.6.6 Reporting

A range of reports can be generated using the stored evaluation scores.

5.6.6.1 Report type

This allows the type of report to be selected:

- Agent scoring averages
- Group(s) scoring averages
- Agent(s) compared to Group(s)
- Agent(s) compared to Company Average

Report type		2
Select report	Agents - scoring averages	~
Include deleted users		
Include deleted projects		

- Group(s) compared to Company Average
- Agent(s) and Group(s) compared to Company Average

Option	Value	
Select report	Select report type	
Include deleted users	On/off	
Include deleted projects	On/off	

5.6.6.2 Report users

The users and/or user groups on who the report should be generated can be selected in this section. The following options can be configured:

Report users		?
Users	-	>
Groups	-	>
Explode groups		
Incl. company average		

Option	Value
Users	Select users
Groups	Select groups
Explode groups	On/off
Incl. company average	On/off



5.6.6.3 Report date filter

Reports can be generated for a speci project or data span. The following o can be configured:

ific	Report date filter	0
ptions	Select project	[all projects]
1	Select date span	[All data]
	Start date	>
	Search and report by	Evaluation date
	Value	
	Select project	
	Date	
	Date	
	Select type	

5.6.6.4 Report options

Search and report by

Option Select project Select date span Start date

Option

Show report data

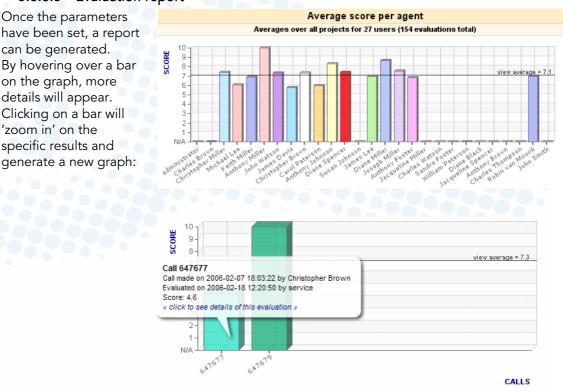
Include empty entries

An optional feature displays the report data. The following options can be configured:

Report options

Show report data Include empty entries Value On/off On/off

2



5.6.6.5 Evaluation report

have been set, a report can be generated. By hovering over a bar on the graph, more details will appear. Clicking on a bar will 'zoom in' on the specific results and

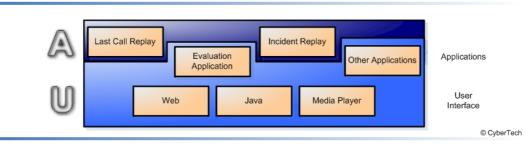


6 Applications

The standard 'search & replay' features may be supplemented by additional, optional applications which are available through the standard web-based user interface. There are two types of applications:

- Client applications
- Module applications

Applications



The client applications are 'fat' clients which need to be installed on each workstation that requires the application. Two client applications are currently available:

- Incident Replay Application
- Last Call Replay Application

A module application is fully integrated into the standard 'search & replay' application. It is web-based and does not need to be installed on workstations. Module applications are licensed by a license key. One module is currently available:

Evaluation Application

6.1 Evaluation Application

The Evaluation Application is integrated into the recording system's standard user interface. The application is described in Chapter 5.6 Evaluation.

6.2 Incident Replay Application

The Incident Replay Application has been specially developed for the search and replay of digital radio recordings. The Incident Replay Application is an intuitive and easy-to-use application for rapid and accurate incident reconstruction from different audio sources (Radio, PBX, etc.), as captured by the recording system.

The Incident Replay Application satisfies the most common requirement in control rooms for analysing specific emergency situations where the simultaneous replay of all communications is necessary to accurately reconstruct a scenario. Valuable time can be saved in collecting the required evidential information which can then be used to more quickly resolve the incident.

The Incident Replay Application can also be used to analyse operational efficiency by providing a clear overview of how teams operate, helping to improve their interaction.



Additionally, Incident Replay is a powerful tool for training new team members by allowing them to easily review real life scenarios.

	denit 1		Q.	1										CYBE	RTECH
	denit 2		T	Start Date	3 /	Duration	Call Type	Channel	Direc	tion	Data Type	Numb	er into	Organisation	Extension
Inc	dent 3	1	2006-03	-13 15:15	47	00.04.08	0, normal	13	0, InBour	d	Trunks	Rolf 242 get	: Or	ganisation	205
		2	2005-03	-13 15:06	:02	00:03:40	0, normal	13	0, InBour	d	Trunks	Lin 03 3	Or	ganisation	205
		3	2006-03	-13 15:02	210	00:02:14	0, normal	13	0, InBour	nd:	Trunks	Ton 216 ges	Or	ganisation	205
		4		-13 14:59		00:00:17	0, normal	6	0, InBour		Trunks	Sanne 239 g		ganisation	253
		5		-13 14:58		00:00:27	0, normal	13	0, InBour		Trunks	Cock 243 ge	s Or	ganisation	205
		6		-13 14:57		00:01:05	0, normal	11	1, OutBo		Trunks	Rolf 242 ges		ganisation	209
		7	and the second se	-13 14:55		00.01.29	0, normal	11	1, OutBo		Trunks	Arno 240 ge		ganisation	209
		8		-13 14:45		00:02:09	0, normal	13	1, OutBoi		Trunks	0347881155		ganisation	205
		9		-13 14:41		00:04:01	0, normal	13	1, OutBo		Trunks	Frank 241 ge		ganisation	205
		10		-13 14:35	5.22	00:00:26	0, normal	4	1, OutBo	und	Trunks	Rob 204 bel	Or	ganisation	219
		<u>•</u> •	MynaVo	cerr					•						
	Mute Vo	lume Sol		Datatype	Кеу	Start			Start Play	Call Type		Direction	Number Info	Organise	
		Myna'		runks	1605129	2006-03-13				0	13	1, OutBound	Frank 241 ges	Organisat	
		- Myna'	/oice T	runks	1605130	2006-03-13	14:45:06	00:02:09 (00:04:02	0	13	1. OutBound	0347881155 ges	Organisat	ion 205
													oo noorroo goo	o guiderione	
		Myna/	/oice T	runks	1605131	2005-03-13	14:55:31	00:01:29 (00.14:27	0	11	1, OutBound	Arno 240 ges	Organisat	
	2 =	Myna)		runks runks	1605131 1605132	2006-03-13 2006-03-13				0	11 11				ion 209
			/oice T				14:57:00	00:01:05	00.15.56			1, OutBound	Arno 240 ges	Organisat	ion 209 ion 209
		Myna'	/oice T /oice T	runks	1605132	2006-03-13	14:57:00 14:58:31	00.01:05 0	00:15:56	0	11	1, OutBound 1, OutBound	Arno 240 ges Rolf 242 ges	Organisat Organisat	ion 209 ion 209 ion 205
		Mynah	/oice T /oice T /oice T	runks runks	1605132 1605133	2006-03-13 2006-03-13	14:57:00 14:58:31 14:59:33	00.01:05 00:00:27 00:00:17	00.15.56 00.17.27 00.18.29	0	11 13	1, OutBound 1, OutBound 0, InBound	Arno 240 ges Rolf 242 ges Cock 243 ges	Organisat Organisat Organisat	ion 209 ion 209 ion 205 ion 253
		Myna' Myna' Myna'	/oice T /oice T /oice T /oice T	runks runks runks	1605132 1605133 1605134	2006-03-13 2006-03-13 2006-03-13	14:57:00 14:58:31 14:59:33 15:02:10	00.01:05 00:00:27 00:00:17 00:02:14	00.15.56 00.17.27 00.18.29 00.21.06	0 0 0	11 13 6	1, OutBound 1, OutBound 0, InBound 0, InBound	Arno 240 ges Rolf 242 ges Cock 243 ges Sanne 239 ges	Organisat Organisat Organisat Organisat	ion 209 ion 209 ion 205 ion 253 ion 205
		Myna)	Voice T Voice T Voice T Voice T Voice T	runks runks runks runks	1605132 1605133 1605134 1605135	2006-03-13 2006-03-13 2006-03-13 2006-03-13	14:57:00 14:58:31 14:59:33 15:02:10 15:06:02	00.01:05 (00:00:27 (00:00:17 (00:02:14 (00:03:40 (00.15.56 00.17.27 00.18.29 00.21.06 00.24.58	0 0 0 0 0 0	11 13 6 13	1, OutBound 1, OutBound 0, InBound 0, InBound 0, InBound	Arno 240 ges Rolf 242 ges Cock 243 ges Sanne 239 ges Ton 216 ges	Organisat Organisat Organisat Organisat Organisat	ion 209 ion 209 ion 205 ion 253 ion 205 ion 205
		Myna' Myna' Myna' Myna' Myna' Myna'	Acice T Acice T Acice T Acice T Acice T Acice T	runks runks runks runks runks runks	1605132 1605133 1605134 1605135 1605135 1605137	2006-03-13 2006-03-13 2006-03-13 2006-03-13 2006-03-13 2006-03-13	14:57:00 14:58:31 14:59:33 15:02:10 15:06:02 15:15:47	00.01:05 (00:00:27 (00:02:14 (00:02:14 (00:03:40 (00:04:06 (00:04:06 (00.15.56 00.17.27 00.18.29 00.21.06 00.24.58 00.34.43	0 0 0 0 0 0	11 13 6 13 13 13 3-03 13	1, OutBound 1, OutBound 0, InBound 0, InBound 0, InBound 0, InBound 0, InBound 1, InBound 1, InBound	Arno 240 ges Rolf 242 ges Cock 243 ges Sanne 239 ges Ton 216 ges Lijn 03 3 Rolf 242 ges	Organisat Organisat Organisat Organisat Organisat Organisat	Image: None of the second se
		Myna' Myna' Myna' Myna' Myna' Myna'	Acice T Acice T Acice T Acice T Acice T Acice T Acice T	runks runks runks runks runks runks 3 1 3 1	1605132 1605133 1605134 1605135 1605135 1605136 1605137	2006-03-13 2006-03-13 2006-03-13 2006-03-13 2006-03-13 2006-03-13 2006-03-13 15.05 15	14:57:00 14:58:31 14:59:33 15:02:10 15:06:02 15:15:47 15:15:47	00.01:05 (00:00:27 (00:00:17 (00:02:14 (00:03:40 (00:04:06 (00:04:06 (00:04:06 (00:04:05 (00:04:05 (00:04:05 (00:04:05 (00:04:05 (00:04:05 (00:00:27 (00:00) (00:00:27 (00:00) (00:00:27 (00:00) (0:00) (0:00) (0:00) (0:00) (0:00) (0:00) (0:00) (0	00.15.56 00.17.27 00.18.29 00.21.06 00.24.58 00.34.43 00.34.43	0 0 0 0 0 0 0 0 0 13 1 19	11 13 6 13 13 13 3-03 5-10 15	1, OutBound 1, OutBound 0, InBound 0, InBound 0, InBound 0, InBound 0, InBound 13-03 11 15-12	Arno 240 ges Rolf 242 ges Cock 243 ges Sanne 239 ges Ton 216 ges Lijn 03 3 Rolf 242 ges	Organisat Organisat Organisat Organisat Organisat Organisat Organisat	kin 209 kin 209 kin 205 kin 253 kin 205 kin 205 kin 205 kin 205 kin 13-0
		Myna' Myna' Myna' Myna' Myna' Myna'	Acice T Acice T Acice T Acice T Acice T Acice T Acice T	runks runks runks runks runks runks 3 1 3 1	1605132 1605133 1605134 1605135 1605135 1605136 1605137	2006-03-13 2006-03-13 2006-03-13 2006-03-13 2006-03-13 2006-03-13 2006-03-13 15.05 15	14:57:00 14:58:31 14:59:33 15:02:10 15:06:02 15:15:47 15:15:47	00.01:05 (00:00:27 (00:00:17 (00:02:14 (00:03:40 (00:04:06 (00:04:06 (00:04:06 (00:04:05 (00:04:05 (00:04:05 (00:04:05 (00:04:05 (00:04:05 (00:00:27 (00:00) (00:00:27 (00:00) (00:00:27 (00:00) (0:00) (0:00) (0:00) (0:00) (0:00) (0:00) (0:00) (0	00.15.56 00.17.27 00.18.29 00.21.06 00.24.58 00.34.43 00.34.43 00.34.43	0 0 0 0 0 0 0 0 0 13 1 19	11 13 6 13 13 13 3-03 5-10 15	1, OutBound 1, OutBound 0, InBound 0, InBound 0, InBound 0, InBound 0, InBound 13-03 11 15-12	Arno 240 ges Rolf 242 ges Cock 243 ges Sanne 239 ges Ton 216 ges Lijn 03 3 Rolf 242 ges 13-03 1513	Organisat Organisat Organisat Organisat Organisat Organisat Organisat	kin 209 kin 209 kin 205 kin 253 kin 205 kin 205 kin 205 kin 205 kin 13-0

The Incident Replay Application:

- Connects to different data sources at the same time and combines the search results into one scenario
- Reproduces search and replay in the same window, making it very easy for the end user to search and play directly
- Enables easy replay of complete scenarios
- Is a user friendly application with a familiar 'look and feel' for Windows users
- Has low implementation costs due to its compatibility with standard recording systems
- Can save a complete scenario and write it to DVD or e-mail it. Once saved the calls can be replayed using programs such as Microsoft Media.
- Has configurable columns. Name and data type for each column can be changed and columns can be added or removed.
- Has a configurable time line with different colours for each data type
- Can mute selected channels to improve understanding of the way in which events unfolded



The Incident Replay Application provides a powerful array of search capabilities to enable to retrieve any case easily. Searching a call or a series of calls is easy using the following search criteria:

Option	Value				
Description	Select				
Start time	Select date en time On/off				
Data Source	Select				
End time	Select date, time On/off				
Data type	Select type				
Minimal duration	Select duration On/off				
Maximal duration	Select duration On/off				
Organisation	Select organisation				
Search criteria	channel				
	direction				
	duration				
	extension				
	• key				
	 number info 				
	• start date				

escrip	otion:				
					< >
					V
art Ti	me:		Data Source:		
3/08	/2004 👻 00:00:00	-	trainingpc3		•
id Tir	ne:		Data Type:		
3/08	/2004 💌 23:59:59	· V	GROUP		Ŧ
		uration:	Organication:		
	Duration: Maximal D		Organisation:	ION	
):00:	01.00:00		Organisation: ORGANISAT	ION	•
):00:	01 - 01:00:00 Creteria:		ORGANISAT	ION	•
):00:	01 Field	-			•
):00:	01 - 01:00:00 Creteria:		ORGANISAT		•
arch	01 Field	-	ORGANISAT Value(s)		V
arch	01 01:00:00 Creteria: Field Channel	All	ORGANISAT Value(s)	-	•
).00 arch 1 2	01 Creteria: Creteria: Channel Direction	All	Value(s)		
0:00: arch 1 2 3	01 01:00:00 Creteria: Channel Direction Duration	All	Value(s)	10	
arch 1 2 3 4	Creteria: Field Channel Direction Duration Extension	All All All	Value(s)	10	;
arch 1 2 3 4 5	Creteria: Field Channel Direction Duration Extension Key	AII AII AII AII AII	Value(s)	- Ok Hel	;

By adding the Incident Replay Application to the recording system, incidents can be replayed exactly as they occurred, combining different audio sources into one complete application.

6.3 Last Call Replay Application

With this small and easy to use application, the last calls from the recording system can be easily found and replayed.

The Last Call Replay Application resides in the MS-Windows XP system tray and can be used in two ways:

1. Immediately replay the last call.

2. List the last calls and select one for replay.

By clicking on the icon in the MS-Windows XP system tray, the last call from the recording system is automatically played again.

MV - Last Call Replay

By starting the Last Call Replay Application, a selection for replay can be made from the last available calls.



lsers			I S refres	sh	\prec options
	Start	Duration	CLI	I/O	Handle
280	2006-05-19 15:56:03	00:00:23	Menno 203	+	klaas
279	2006-05-19 12:33:10	00:00:01	Kies a.u.b.	\rightarrow	klaas
278	2006-05-19 09:05:52	00:00:01	Kies a.u.b.	\rightarrow	klaas
277	2006-05-18 14:53:28	00:00:00	Recovered	+	klaas
276	2006-05-18 14:53:08	00:00:00	Recovered	+	klaas
275	2006-05-18 14:52:30	00:00:00	Recovered	+	klaas
274	2006-05-18 13:46:51	00:00:03	Kies a.u.b.	→	klaas
273	2006-05-17 11:53:57	00:00:25	Lars 254 bel	\rightarrow	klaas
272	2006-05-17 11:53:31	00:00:06	Ivar 245 bel	\rightarrow	klaas
271	2006-05-16 14:19:37	00:00:01	Kies a.u.b.	→	klaas
	<u>)</u>			<u>.</u>	6.080 0.565
	play [] pause	stop		RT	ECH 🐻

The Last Call Replay Application:

- Replays last call(s) with one click, eliminating the need for starting the Search & Replay application.
- Has easy-to-use software
- Includes configurable user selection
- Automatically searches the recorder of the logged-on recording system
- Provides the same access rights to the main recording system as the Last Call Replay Application

6.4 PC Replay Application

The PC Replay Station Application allows users to search and replay calls from an archive location without having a live connection to the recording system. Calls can be retrieved using any PC from all the available archive locations, such as DVD RAM media or a network archive location (NAS/SAN).

The PC Replay Station Application is compatible with the latest versions of the recording system and uses the standard web browser based graphical user interface. The application can be installed on any standalone PC with the following minimal configuration:

- MS-Windows XP Operating System
- MS-Explorer version 5 or higher

Calls are first imported from the archive media into the PC Replay Station Application database, from where the selected calls can be replayed.

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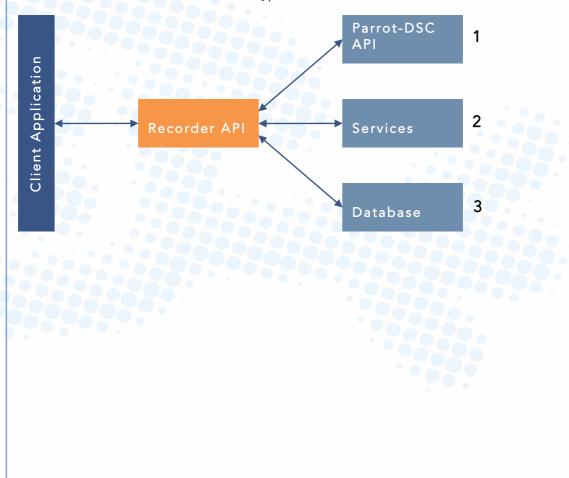
6.5 Recorder API

An API (or Application Program Interface) is a set of routines, protocols, and tools for building software applications. The Recorder API makes it easier to develop a software application that talks to the recording system by providing the building blocks. A programmer then puts the blocks together. With the Recorder API the recording system can be integrated into the customers own IT environment.

The Recorder API will:

- Start/stop/monitor call recording of a specific channel (standalone system or core server only. The Recorder API cannot be used for satellites)
- Write additional information to the database (e.g., Account nr, Customer ID, marking, etc.)
- Read call information from the database
- Retrieve audio files from the recording system
- Register free seating agents
- Call Replay actions
- Collect real-time channel status information (core server only, not for satellites)

The Recorder API can be used for three types of events:



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Appendix A - Available tapping cards

Myracle

Boards: Analogue, incl. software

Myracle, 4 Analog ch., Parallel, Short size PCI
Myracle, 4 Analog ch., Parallel, Short size PCI-E
Myracle, 8 Analog ch., Parallel, Short size PCI
Myracle, 8 Analog ch., Parallel, Short size PCI-E
Myracle, 8 Analog ch., Parallel, Medium PCI-E
Myracle, 8 Analog ch., Parallel, Full size PCI
Myracle, 8 Analog ch., Parallel, Full size PCI-E
Myracle, 16 Analog ch., Parallel, Medium PCI-E
Myracle, 16 Analog ch., Parallel, Full size PCI-E
Myracle, 16 Analog ch., Parallel, Full size PCI
Myracle, 24 Analog ch., Parallel, Full size PCI
Myracle, 24 Analog ch., Parallel, Full size PCI-E

Boards: Analogue + Beep Tone, incl. software

Myracle, 4 Analog+BT ch., Parallel, Short PCI-E Myracle, 8 Analog+BT ch., Parallel, Short PCI Myracle, 8 Analog+BT ch., Parallel, Short PCI-E Myracle, 8 Analog+BT ch., Parallel, Med. PCI-E Myracle, 8 Analog+BT ch., Parallel, Full PCI-Myracle, 16 Analog+BT ch., Parallel, Full PCI-Myracle, 16 Analog+BT ch., Parallel, Full PCI-E Myracle, 16 Analog+BT ch., Parallel, Full PCI-E Myracle, 16 Analog+BT ch., Parallel, Full PCI-E Myracle, 24 Analog+BT ch., Parallel, Full PCI-Myracle, 24 Analog+BT ch., Parallel, Full PCI-E

Boards: Digital Parallel, incl. software

Myracle, 4 Digital ch., Parallel, Short size PCI Myracle, 4 Digital ch., Parallel, Short size PCI-E Myracle, 8 Digital ch., Parallel, Short size PCI-E Myracle, 8 Digital ch., Parallel, Short size PCI-E Myracle, 8 Digital ch., Parallel, Medium PCI-E Myracle, 8 Digital ch., Parallel, 2 wires, Full PCI Myracle, 8 Digital ch., Parallel, 2 wires, Full PCI-E Myracle, 8 Digital ch., Parallel, 2 wires, Full PCI-E Myracle, 16 Digital ch., Parallel, Medium PCI-E Myracle, 16 Digital ch., Parallel, Full size PCI-E Myracle, 16 Digital ch., Parallel, Full size PCI-E Myracle, 24 Digital ch., Parallel, Full size PCI-E Myracle, 24 Digital ch., Parallel, Full size PCI-E

Boards: Digital Serial, incl. software

Myracle, 4 Digital ch., Serial, Short size PCI
Myracle, 4 Digital ch., Serial, Short size PCI-E
Myracle, 4 Digital ch., Serial, Medium PCI-E
Myracle, 4 Digital ch., Serial, Full size PCI-E
Myracle, 4 Digital ch., Serial, Full size PCI
Myracle, 8 Digital ch., Serial, Medium PCI-E
Myracle, 8 Digital ch., Serial, Full size PCI

Myracle, 8 Digital ch., Serial, Full size PCI-E Myracle, 12 Digital ch., Serial, Full size PCI-E Myracle, 12 Digital ch., Serial, Full size PCI

Boards: Trunks, incl. software

Myracle, first 8 ch., E1/T1, Short size PCI	
Myracle, first 8 ch., E1/T1, Short size PCI-E	
Myracle, first 16 ch., E1/T1, Short size PCI	
Myracle, first 16 ch., E1/T1, Short size PCI-E	
Myracle, first 24 ch., E1/T1, Short size PCI	
Myracle, first 24 ch., E1/T1, Short size PCI-E	
Myracle, 32 ch., E1/T1, Short size PCI	
Myracle, 32 ch., E1/T1, Short size PCI-E	
Myracle, 32 ch., E1/T1, Medium size PCI-E	
Myracle, 32 ch., E1/T1, Full size PCI-E	
Myracle, 32 ch., E1/T1, Full size PCI	
Myracle, 64 ch., E1/T1, Medium size PCI-E	
Myracle, 64 ch., E1/T1, Full size PCI-E	
Myracle, 64 ch., E1/T1, Full size PCI	

Boards: VoIP, incl. software

Myracle, VoIP 4 ch. base license (incl. SPCI-E) Myracle, VoIP 4 ch. base license (incl. SPCI card) Myracle, VoIP from 4 to 8 ch. licenses upgrade Myracle, VoIP 8 ch. base license (incl. SPCI-E) Myracle, VoIP 8 ch. base license (incl. SPCI card) Myracle, VoIP 8 ch. additional licenses

Baseboards only

Myracle Baseboard, Short size PCI-E	
Myracle Baseboard, Short size PCI	
Myracle Baseboard, Medium size PCI-E	
Myracle Baseboard, Full size PCI-E	
Myracle Baseboard, Full size PCI	

Modules excl. licenses

Module, 8 Analog ch., Parallel Module, 8 Analog ch., Parallel, +Beep Tone Module, 8 Digital ch., Parallel Module, 4 Digital ch., Serial Module, 32 ch., E1/T1

Licenses only

Myracle, 4 ch. Analogue recording license Myracle, 8 ch. Analogue recording license Myracle, 8 ch. Analogue+Beep recording lic. Myracle, 4 ch. Digital par. recording license Myracle, 8 ch. Digital par. recording license Myracle, 4 ch. Digital serial recording license

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Myracle, 8 ch. additional E1/T1 recording license Myracle, 32 ch. E1/T1 recording license Myracle, VoIP from 4 to 8 ch. licenses upgrade Myracle, VoIP 8 ch. additional licenses

Pro

Boards: Analogue, incl. software

Pro, 4 Analog ch., Parallel, Short size PCI-E
Pro, 8 Analog ch., Parallel, Short size PCI
Pro, 8 Analog ch., Parallel, Short size PCI-E
Pro, 8 Analog ch., Parallel, Medium PCI-E
Pro, 8 Analog ch., Parallel, Full size PCI
Pro, 8 Analog ch., Parallel, Full size PCI-E
Pro, 16 Analog ch., Parallel, Medium PCI-E
Pro, 16 Analog ch., Parallel, Full size PCI
Pro, 16 Analog ch., Parallel, Full size PCI-E
Pro, 24 Analog ch., Parallel, Full size PCI
Pro, 24 Analog ch., Parallel, Full size PCI-E

Boards: Analogue + Beep Tone, incl. software

Pro, 4 Analog+BT ch., Parallel, Short PCI-E Pro, 8 Analog+BT ch., Parallel, Short PCI Pro, 8 Analog+BT ch., Parallel, Short PCI-E Pro, 8 Analog+BT ch., Parallel, Medium PCI-E Pro, 8 Analog+BT ch., Parallel, Full size PCI Pro, 16 Analog+BT ch., Parallel, Full size PCI-E Pro, 16 Analog+BT ch., Parallel, Full size PCI-E Pro, 16 Analog+BT ch., Parallel, Full size PCI-E Pro, 24 Analog+BT ch., Parallel, Full size PCI-E Pro, 24 Analog+BT ch., Parallel, Full size PCI-E

Boards: Digital Parallel, incl. software

Pro, 8 Digital ch., Parallel, Short size PCI
Pro, 8 Digital ch., Parallel, Short size PCI-E
Pro, 8 Digital ch., Parallel, Medium PCI-E
Pro, 8 Digital ch., Parallel, Full size PCI
Pro, 16 Digital ch., Parallel, Medium PCI-E
Pro, 16 Digital ch., Parallel, Medium PCI-E
Pro, 16 Digital ch., Parallel, Full size PCI
Pro, 16 Digital ch., Parallel, Full size PCI
Pro, 16 Digital ch., Parallel, Full size PCI
Pro, 24 Digital ch., Parallel, Full size PCI-E
Pro, 24 Digital ch., Parallel, Full size PCI-E

Boards: Digital Serial, incl. software

Pro, 4 Digital ch., Parallel, Serial, Short size PCI
Pro, 4 Digital ch., Parallel, Serial, Short size PCI-E
Pro, 4 Digital ch., Parallel, Serial, Medium PCI-E
Pro, 4 Digital ch., Parallel, Serial, Full size PCI
Pro, 4 Digital ch., Parallel, Serial, Full size PCI-E
Pro, 8 Digital ch., Parallel, Serial, Medium PCI-E
Pro, 8 Digital ch., Parallel, Serial, Full size PCI
Pro, 8 Digital ch., Parallel, Serial, Full size PCI
Pro, 8 Digital ch., Parallel, Serial, Full size PCI

Additional VoIP options

VoIP G.729A license for 8 channels VoIP conc. channels, ratio 0%..25%, additional VoIP conc. channels, ratio 26%.50%, additional VoIP conc. channels, ratio 51%..100%, additional

Pro, 12 Digital ch., Parallel, Serial, Full PCI Pro, 12 Digital ch., Parallel, Serial, Full PCI-E

Boards: Trunks, incl. software

Pro, first 8 ch., E1/T1, Short size PCI
Pro, first 8 ch., E1/T1, Short size PCI-E
Pro, first 16 ch., E1/T1, Short size PCI
Pro, first 16 ch., E1/T1, Short size PCI-E
Pro, first 24 ch., E1/T1, Short size PCI
Pro, first 24 ch., E1/T1, Short size PCI-E
Pro, 32 ch., E1/T1, Short size PCI
Pro, 32 ch., E1/T1, Short size PCI-E
Pro, 32 ch., E1/T1, Medium PCI-E
Pro, 32 ch., E1/T1, Full size PCI
Pro, 32 ch., E1/T1, Full size PCI-E
Pro, 64 ch., E1/T1, Medium size PCI-E
Pro, 64 ch., E1/T1, Full size PCI
Pro, 64 ch., E1/T1, Full size PCI-E
Pro, 96 ch., E1/ T1, Full size PCI
Pro, 96 ch., E1/ T1, Full size PCI-E

Boards: PCM, incl. software

Pro, 32 ch., PCM32, Short size PCI Pro, 32 ch., PCM32, Short size PCI-E Pro, 32 ch., PCM32, Medium size PCI-E Pro, 32 ch., PCM32, Full size PCI Pro, 64 ch., PCM32, Full size PCI-E Pro, 64 ch., PCM32, Full size PCI Pro, 64 ch., PCM32, Full size PCI-E Pro, 96 ch., PCM32, Full size PCI Pro, 96 ch., PCM32, Full size PCI-E

Boards: VoIP, incl. software

Pro, VoIP 4 ch. base license (incl. s-PCI card) Pro, VoIP 4 ch. base license (incl. s-PCI-E card) Pro, VoIP from 4 to 8 ch. licenses upgrade Pro, VoIP 8 ch. base license (incl. s-PCI card) Pro, VoIP 8 ch. base license (incl. s-PCI-E card) Pro, VoIP 8 ch. additional licenses

Baseboards only

Pro Baseboard, Short size PCI
Pro Baseboard, Short size PCI-E
Pro Baseboard, Medium size PCI-E
Pro Baseboard, Full size PCI
Pro Baseboard, Full size PCI-E

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Modules excl. licenses

Module, 8 Analog ch., Parallel
Module, 8 Analog ch., Parallel, + Beep Tone
Module, 8 Digital ch., Parallel
Module, 4 Digital ch., Parallel, Serial
Module, 32 channels E1/T1, Parallel

Licenses only

Pro, 8 ch. Analogue recording license
Pro, 8 ch. Analogue+Beep recording lic.
Pro, 8 ch. Digital par. recording license

Pro, 4 ch. Digital serial recording license

Pro, 8 ch. additional E1/T1 recording license
Pro, 32 ch. E1/T1 recording license
Pro, VoIP from 4 to 8 ch. licenses upgrade
Pro, VoIP 8 ch. additional licenses

Additional VoIP options

VoIP G.729A license for 8 channels
VoIP concurrent channels, ratio 0%25%
VoIP concurrent channels, ratio 26%50%
VoIP concurrent channels, ratio 51%100%





Appendix B - Supported connectivity

VoIP	(via Spanning port)
Alcatel VoIP	IP Touch 4018, IP Touch 4028, IP Touch 4038, IP Touch 4068 4010 IP e-Reflexes Easy / D351 IP 4020 IP e-Reflexes Premium / D352 IP, 4980 Soft phone 4035 IP e-Reflexes Advanced / D354 IP, PIMphony (Basic / Pro / Team)
Avaya VoIP	4601 IP,4601 IP, 4610SW IP, 4620 IP, 4621SW IP, 4622SW IP 4625 IP, 4630SW IP, 4690 IP Speakerphone, 5601 IP, 5602 IP
	5610 IP, 5620 IP
Cisco VoIP	7902G, 7905G, 7906G, 7910G, 7911G, 7912G, 7920 Wireless 7935 Conference Station, 7936 Conference Station, 7940G, 7941G/GE, 7960G, 7961G/GE, 7970G, 7971G/GE, 7985G-GE
Ericsson VoIP	Dialog 4422 IP Office, Dialog 4425 IP Vision
VoIP h323/ h225	H323 / H225 (start-stop + nr info)
Mitel VolP	5201 IP Phone, 5207 IP Phone, 5215 IP Phone (Dual Mode) 5220 IP Phone (Dual Mode), 5230 IP Phone, 5235 IP Phone 5240 IP Phone
Nortel VolP	IP Phone 2001, IP Phone 2002, IP Phone 2004, IP Phone 2007 IP Phone 1110, IP Phone 1120E, IP Phone 1140E, WLAN Handset 2210, WLAN Handset 2211 IP Audio Conference Phone 2033, Mobile Voice Client 2050 IP Softphone 2050, Mobile USB Headset Adapter for IP Softphones
Selta VoIP	Netfon 200, Netfon 400
VoIP SIP	SIP
VoIP VOX	RTP Audio
Digital Parallel	
Alcatel 4200/4400/	4003, 4011, 4012, 4023, 4034, 4004 Reflex first, 4010 Reflex easy 4059 PC operator, 4019 (9-series), 4029 (9-series), 4039 (9-series) 4020 Reflex premium, 4035 Reflex advanced
Ascom Alcatel	Office 20, Office 30, Office 40, Office 25, Office 35, Office 45/45pro, Office 130/130pro, Crystal (use S0 ETSI protocol)
Aspect	Teleset Model 3010, Teleset Model 3190, Teleset Model 3192
Avaya 5ESS	8510 ISDN, 8520 ISDN, 8528 ISDN, 75xx series (firmware fp3.x)
Avaya Definity 2- wire	24xx series, 64xx series, 84xx series, Call Master III, Call Master IV Call Master V, Call Master VI, 302 Attendant Console
Avaya Definity 4- wire	74xx series, 84xx series, 94xx series, CallMaster I, CallMaster II CallMaster III, CallMaster IV, CallMaster V, 302 Attendant Console



Avaya Merlin Legend MLX 2-wire	Avaya Merlin Magix MLX, OpenCom 1000, Telrad IS, Varix 840
Avaya Merlin Legend MLX 4-wire	Realitis DX, BRI ETSI, BRI 1TR6, BRI Euro ISDN, BRI 5ESS BRI National ISDN NI-1, BRI DMS-100, Avaya Merlin Magix (BRI) MLX Avaya Definity 75xx series, Bosch Integrall 4-wire sets Opencom 1000, Telrad IS, Varix 840
Avaya/Tenovis Integral 2-wire	TB13, TE13, TH13, TM13, TS13, TH93, TH93C, T3 Classic, T3 Comfort
Avaya/Tenovis Integral 4-wire	Realitis DX, BRI ETSI, BRI 1TR6, BRI Euro ISDN, BRI 5ESS BRI National ISDN NI-1, BRI DMS-100, Avaya Merlin Magix (BRI) MLX Avaya Definity 75xx series, Bosch Integrall 4-wire sets Opencom 1000, Telrad IS, Varix 840
Bosch Integral 2-wire	TB13, TE13, TH13, TM13, TS13, TH93 TH93C, T3 Classic, T3 Comfort
Bosch Integral 4-wire	Realitis DX, BRI ETSI, BRI 1TR6, BRI Euro ISDN, BRI 5ESS BRI National ISDN NI-1, BRI DMS-100, Avaya Merlin Magix (BRI) MLX Avaya Definity 75xx series, Bosch Integrall 4-wire sets Opencom 1000, Telrad IS, Varix 840
DMS-100 (BRI)	Realitis DX, BRI ETSI, BRI 1TR6, BRI Euro ISDN, BRI 5ESS BRI National ISDN NI-1, BRI DMS-100, Avaya Merlin Magix (BRI) MLX Avaya Definity 75xx series, Bosch Integrall 4-wire sets Opencom 1000, Telrad IS, Varix 840
EADS	MC401, MC405, MC420, MC520, MC620, MC640
Ericsson Business Phone Elu25/28	DBC199, DBC210 (Dialog 3210), DBC201/211 (Dialog 3201/3211) DBC202/212 (Dialog 3202/3212), DBC203/213 (Dialog 3203/3213) DBC214 (Dialog 3214), DBC220 (Dialog 4220 Lite) <i>(*))</i> DBC222 (Dialog 4222 Office) (*) DBC223 (Dialog 4223 Professional) (*) DBC224 (Dialog 4224 Operator) (*) DBC225 (Dialog 4225 Vision) (*) DBC601 (Dialog 2601), DBC631 (Dialog 2631), DBC661 (Dialog 2661) DBC662 (Dialog 2662), Operator Workstation (OWS) Operator Console (OPI II), Operator Console (OPI 3213) Trader Panel CTT10 / CTT11, Trader Panel TIU, Business Phone Sets
Ericsson MD110 Elu25/28	DBC199, DBC210 (Dialog 3210), DBC201/211 (Dialog 3201/3211) DBC202/212 (Dialog 3202/3212), DBC203/213 (Dialog 3203/3213) DBC214 (Dialog 3214), DBC220 (Dialog 4220 Lite) (*) DBC222 (Dialog 4222 Office) (*) DBC223 (Dialog 4223 Professional) (*) DBC224 (Dialog 4224 Operator) (*) DBC225 (Dialog 4225 Vision) (*) DBC601 (Dialog 2601), DBC631 (Dialog 2631), DBC661 (Dialog 2661) DBC662 (Dialog 2662), Operator Workstation (OWS) Operator Console (OPI II), Operator Console (OPI 3213) Trader Panel CTT10 / CTT11, Trader Panel TIU, Business Phone Sets



Fujitsu Coral	DKT-E 1110, DKT-E 2320, DKT-E 2311, DKT-E 2321, DKT-E 2322 DST-E, FLEXSET 120 series, FLEXSET 280 series
Generic SO (BRI)	Realitis DX, BRI ETSI, BRI 1TR6, BRI Euro ISDN, BRI 5ESS BRI National ISDN NI-1, BRI DMS-100, Avaya Merlin Magix (BRI) MLX Avaya Definity 75xx series, Bosch Integrall 4-wire sets Opencom 1000, Telrad IS, Varix 840
Generic Up0	Avaya Merlin Magix MLX, OpenCom 1000, Telrad IS, Varix 840
Intertel Axxess	550.4000 Standard Display Phones, 550.4100 Executive Display Phone 550.4300 Basic Phone, 550.4400 Standard Display Phone 550.4500 Executive Display Phone, 550.8500 Intertel Axxess Basic Digital Phone 550.8520 Intertel Axxess Standard Display Phone 550.8560 Intertel Axxess Executive Display Phone
ISDN2 ETSI/1TR6	ETSI, 1TR6, National ISDN1, INS-64
LG Aria (Lucky Goldstar)	LKD-2NS (2-Button Non-Display Keyphone) LKD-8DS (8-Button Display Keyphone) LKD-30D (30-Button Display Keyphone) LKD-30LD (30-Button Large Display Keyphone) LDP-7004D (4-Button Non-Display Keyphone) LDP-7008D (8-Button Display Keyphone) LDP-7016D (16-Button Display Keyphone) LDP-7024D (24-Button Display Keyphone), LDP-7024LD (24-Button Large Display Keyphone), LGP-xxx
LG Starex-VSP	LKD-2NS (2-Button Non-Display Keyphone) LKD-8DS (8-Button Display Keyphone) LKD-30D (30-Button Display Keyphone) LKD-30LD (30-Button Large Display Keyphone) LDP-7004D (4-Button Non-Display Keyphone) LDP-7008D (8-Button Display Keyphone) LDP-7016D (16-Button Display Keyphone) LDP-7024D (24-Button Display Keyphone), LDP-7024LD (24-Button Large Display Keyphone), LGP-xxx
NEC	DTP-8-1, DTP-16-1, DTP-8D-1, DTP-16D-1, DTP-32D-1, DTP-32DE-1 DTU-8-1, DTU-16-1, DTU-32-1, DTU-8D-1, DTU-8D-2, DTU-16D-1 DTU-16D-2, DTU-32D-1, DTU-32D-2, ETJ-8-2, ETJ-16DC-1 (or 2) ETJ-16-2DD, SN716 Desk Console
NEC Aspire/Aspila	Soon Available
Nitsuko DX2E	Soon Available
Nortel Matra	MC401, MC405, MC420, MC520, MC620, MC640
Nortel Meridian M1	M2006 (Aries), M2008 (Aries), M2009 (Aries), M2018 (Aries) M2216 (Aries), M2316 (Aries), M2616 (Aries), M3110 (Orion) M3310 (Orion), M3820 (Orion), M2250 (single extension only) M3901 (Taurus), M3902 (Taurus), M3903 (Taurus), M3904 (Taurus) M3905 (Taurus)



Nortel Norstar	M7100, M7208, M7310, M7316, M7324, M7410, T7100, T7208, T7316
Panasonic KX- TD/TDA	KX-T 70xx, KX-T 72xx, KX-T 73xx, KX-T 74xx, KX-T 75xx, KX-T 76xx, KX-T 77xx
Philips Sopho	d310 /2 Ergoline mod 1 2-wire, d320 /2 Ergoline mod 2 2-wire
2-wire	d325 /2 Ergoline mod 3 2-wire, d330 /2 Ergoline mod 3 2-wire
	d340 /2 Ergoline mod 4 2-wire
Philips Sopho	d622S, d623S, d624S, d310 / Ergoline mod 1 4-wire
4-wire	d320 / Erogline mod 2 4-wire, d325 / Ergoline mod 3- 4-wire
	d330 / Ergoline mod 3 4-wire, d340 / Ergoline mod 4 4-wire Sopho Operator Phone B630, Sopho Console Model 60E
	Sopho Operator mone Boso, Sopho Console Moder dol
Realitis DX	Realitis DX, BRI ETSI, BRI 1TR6, BRI Euro ISDN, BRI 5ESS
4-wire	BRI National ISDN NI-1, BRI DMS-100, Avaya Merlin Magix (BRI) MLX
	Avaya Definity 75xx series, Bosch Integrall 4-wire sets Opencom 1000, Telrad IS, Varix 840
Rockwell Spectrum	Realitis DX, BRI ETSI, BRI 1TR6, BRI Euro ISDN, BRI 5ESS
4-wire	BRI National ISDN NI-1, BRI DMS-100, Avaya Merlin Magix (BRI) MLX Avaya Definity 75xx series, Bosch Integrall 4-wire sets
	Opencom 1000, Telrad IS, Varix 840
Selta SAEkey/	SAEFON CL08, SAEFON CL08D, SAEFON CL16D, SAEFON CL28D
SAExxIPX	SAEFON CL76D, OP2 Attendant Console, Large Display
	SAEFON LE, SAEFON B, SAEFON T, SAEFON TK, SAEFON E
Siemens Hicom	Optiset E entry, Optiset E basic, Optiset E standard
	Optiset E comfort / advance plus, Optiset E conference, Optiset E
	AC 3.0 / 4.0 , ACWIN 3.0 / 4.0, OptiPoint 500 entry, OptiPoint 500 OptiPoint 500 economy, OptiPoint 500 standard, OptiPoint 500 adv.
	Optiroint soo economy, Optiroint soo standard, Optiroint soo adv.
Siemens Hipath	Optiset E entry, Optiset E basic, Optiset E standard
	Optiset E comfort / advance plus, Optiset E conference, Optiset E
	AC 3.0 / 4.0 , ACWIN 3.0 / 4.0, OptiPoint 500 entry, OptiPoint 500 OptiPoint 500 economy, OptiPoint 500 standard, OptiPoint 500 adv.
Siemens Hipath DX	Realitis DX, BRI ETSI, BRI 1TR6, BRI Euro ISDN, BRI 5ESS
4-wire	BRI National ISDN NI-1, BRI DMS-100, Avaya Merlin Magix (BRI) MLX
	Avaya Definity 75xx series, Bosch Integrall 4-wire sets Opencom 1000, Telrad IS, Varix 840
Tadiran/	DKT-E 1110, DKT-E 2320, DKT-E 2311, DKT-E 2321,
Tadicom Coral	DKT-E 2322, DST-E
	FLEXSET 120 series, FLEXSET 280 series
Toshiba Strata	DKT2001, DKT2004, DKT2010, DKT2030, DKT2501, DKT2510,
	DKT2520, DKT3010, DKT3020, DKT35xx



Digital Serial Avaya Index SDX Mitel SX200/SX 2000 Analogue Parallel	INDeX DT1, INDeX DT3, INDeX DT4, INDeX DT5, INDeX DT6 INDeX 2010, INDeX 2030, INDeX 2050, INDeX 2060, INDeX 20CC Superset 4001, Superset 4015, Superset 4025, Superset 4125, Superset 4150
Mitel SX200/SX 2000 Analogue Parallel	INDeX 2010, INDeX 2030, INDeX 2050, INDeX 2060, INDeX 20CC Superset 4001, Superset 4015, Superset 4025,
SX200/SX 2000 Analogue Parallel	
Analogue	
incl. recording beep tone)	All Sets All Trunks All Handset All Radio
E1/T1 digital passive trunk	
E1 CCS Trunks	DASS2, DPNSS, ISDN30, QSIG, PCM30
T1 CAS Trunks	FXO/FXS D4 loopstart, FXO/FXS ESF loopstart, FXO/FXS Groundstart E&M (Winkstart[FGB] / doublewink[FGD] / immediate)
T1 CCS Trunks	4ESS, 5ESS, DMS-100, National ISDN1, National ISDN2, INS-1500
	Dassive trunk E1 CCS Trunks T1 CAS Trunks T1 CCS Trunks



Appendix C – Channel capacities

These are the channels capacities per chassis, for processors versus the compressions and codec's.



Stand Alone Server Celeron 2.8Ghz, 1GB RAM

Stand Alone Server

Stand Alone Server

Pentium 4.3 Ghz, 1GB RAM

Satellite Pentium 4.3 Ghz, 1GB RAM

Xeon 3.4 Ghz, 1GB RAM

Satellite

Xeon

3.4 Ghz,

1GB RAM

Compression/channels	Analogue	Digital	Trunk	G.711	G.729A
Uncompressed	96	96	80	128	64
ADPCM32	96	96	80	128	64
(Fast) GSM	96	96	80	128	64
True Speech	40	40	32	40	32



Compression/channels	Analogue	Digital	Trunk	G.711	G.729A
Uncompressed	128	128	104	168	80
ADPCM32	128	128	104	168	80
(Fast) GSM	128	128	104	168	80
True Speech	48	48	40	56	40

Compression/channels	Analogue	Digital	Trunk	G.711	G.729A
Uncompressed	144	144	120	200	96
ADPCM32	144	144	120	200	96
(Fast) GSM	144	144	120	200	96
True Speech	56	56	48	64	48

Compression/channels	Analogue	Digital	Trunk	G.711	G.729A
Uncompressed	128	128	104	168	80
ADPCM32	128	128	104	168	80
(Fast) GSM	128	128	104	168	80
True Speech	48	48	40	56	40

Digital

144

144

144

56

G.71

200

200

200

64

G.729/

96

96

96

48

Trunk

120

120

120

48

Analogue

144

144

144

56

Compression/channels

Uncompressed

ADPCM32

(Fast) GSM

True Speech

	intel inside
Į	XEON.



Stand Alone Server Dual Xeon 3.4 Ghz, 2 GB RAM

Compression/channels	Analogue	Digital	Trunk	G.711	G.729A
Uncompressed	248	248	248	240	168
ADPCM32	248	248	248	240	168
(Fast) GSM	248	248	248	240	168
True Speech	96	96	80	112	80

Compression/channels	Analogue	Digital	Trunk	G.711	G.729A
Uncompressed	288	288	240	240	192
ADPCM32	288	288	240	240	192
(Fast) GSM	288	288	240	240	192
True Speech	120	120	96	128	96



CYBERTECH

Index

Access permissions 35
Alarms 12
API
Applications 13, 49
Archive 52
Archive locations 29
Archive rules
Archive Schedule 30
Archiving 10
Audio player 41, 45
Audit trail 24
Automatic Gain Control
(AGC) 28
Backup 25
Beep tone6
Call Centers 14
Call permissions
Call search
Calls settings 25
Capacities
Censure list
Channel groups
Channel playback 38
Channel properties 38
Channels
Codec's 62
Compression
Connectivity 57
Converter 6
Coverages
CTI 17
Database fields
Delete calls
Desktop PC 18
DVD Ram
EADS
E-mail 12
E-mail 12 EMC 10
Encryption 9, 26
Encryption

......

5	Evaluation Application 42	Recorded ca
5 2 3 7 2 7	Evaluation form	Recorder Al
3	Financial14	Recorder se
7	Fixed seating	Recording i
2	Forms	Relay conta
7	Free seating22, 34, 53	Replay by P
7	Global Settings24	Reporting
)	Graph	Retrieval
)	Incident Replay	Review
5	Application 49	Rijndael
1	Industrial chassis	Satellite
	Input5	Scenarios
3	lomega REV 10	Search form
5	Keep Alive	Search quer
5	Languages 24	Search resu
1	Last Call Replay	Security set
5	Application51	selection
6 7 5 2 3 3 2 3	Locations	Selection
5	Log-file	Server
2	Mail server	Server/Sate
3	Mail server settings 25	Services
2	Marks 29	SNMP
3	Motorola14	Stand alone
3	Multi-site16	Storage
3 2 2 2	Myracle 15, 54	System Con
2	MySQL9	System Insta
2	Network Attached	System mes
7	Storage (NAS) 10	System sett
5	Password	System state
7	PC Replay 52	Tapping car
7	PCI6	TETRA
	PCI-E6	User admini
	PIKA 11	User groups
3	Pro 15, 55	User Interfa
	Projects	Users
1	Public Safety14	WAV
2	Quality Management 14	Zoom
)	Radio 49	
5	Record list33	