CYBERTECH
RECORDING SOLUTIONS

RECORDING SOLUTIONS OVERVIEW

Integrating Compliance and Quality Recording

CYBERTECH
INTERNATIONAL

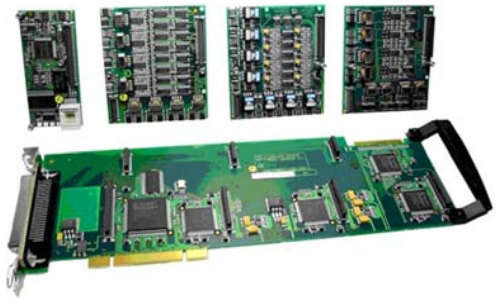
Agenda

1. Configurations
2. Input Types
3. Storage
4. Software
5. Optional Applications
6. Summary

1. Configurations

The CyberTech Recording Solution consists of:

An Input card



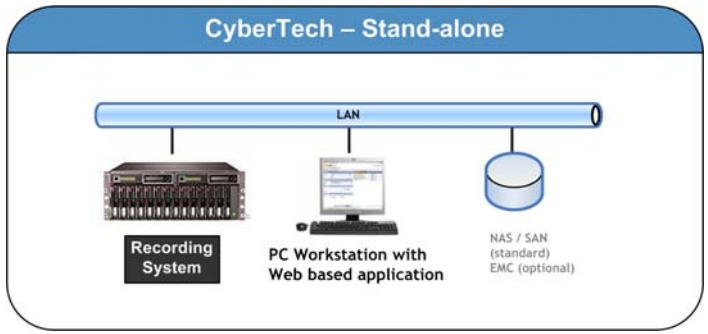
The Recording software

A Chassis

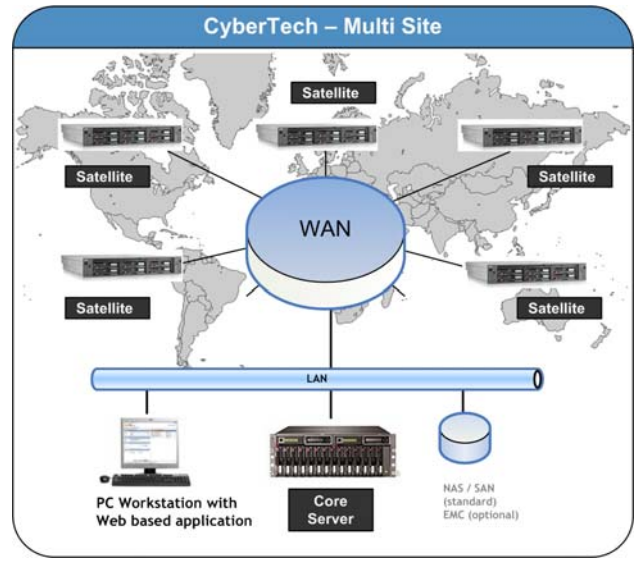
- Available in 2 versions: Myracle and Pro

CYBERTECH MYRACLE CYBERTECH PRO

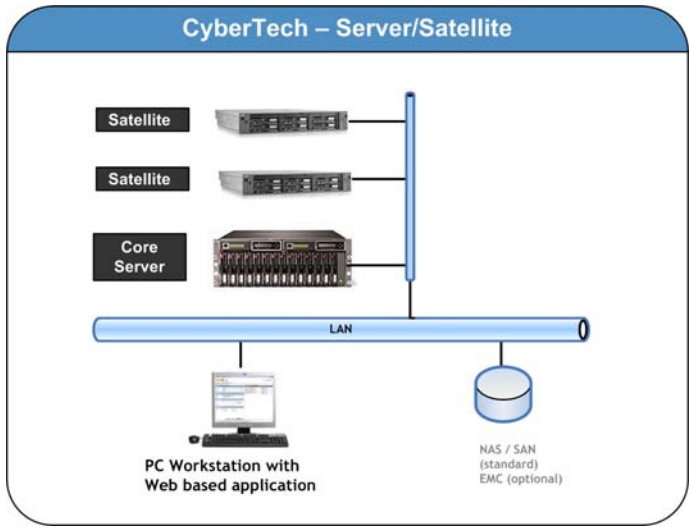
- Myracle for max. 64 channels, plug-and-play, turn-key solution, easy deployment
- Pro for larger installations, CTI integrations, active VoIP recording, screen recording
- Seamless upgrade path from Myracle to Pro or Digital to VoIP recording



Stand-alone for max. 240 channels



Multi-site with satellites in remote offices or branches



Core Server plus Satellites for easy expanding of channels

2. Input Types

The CyberTech Recording Solutions can capture different kinds of input:

- **Voice**
- **Data**
- **Screen**

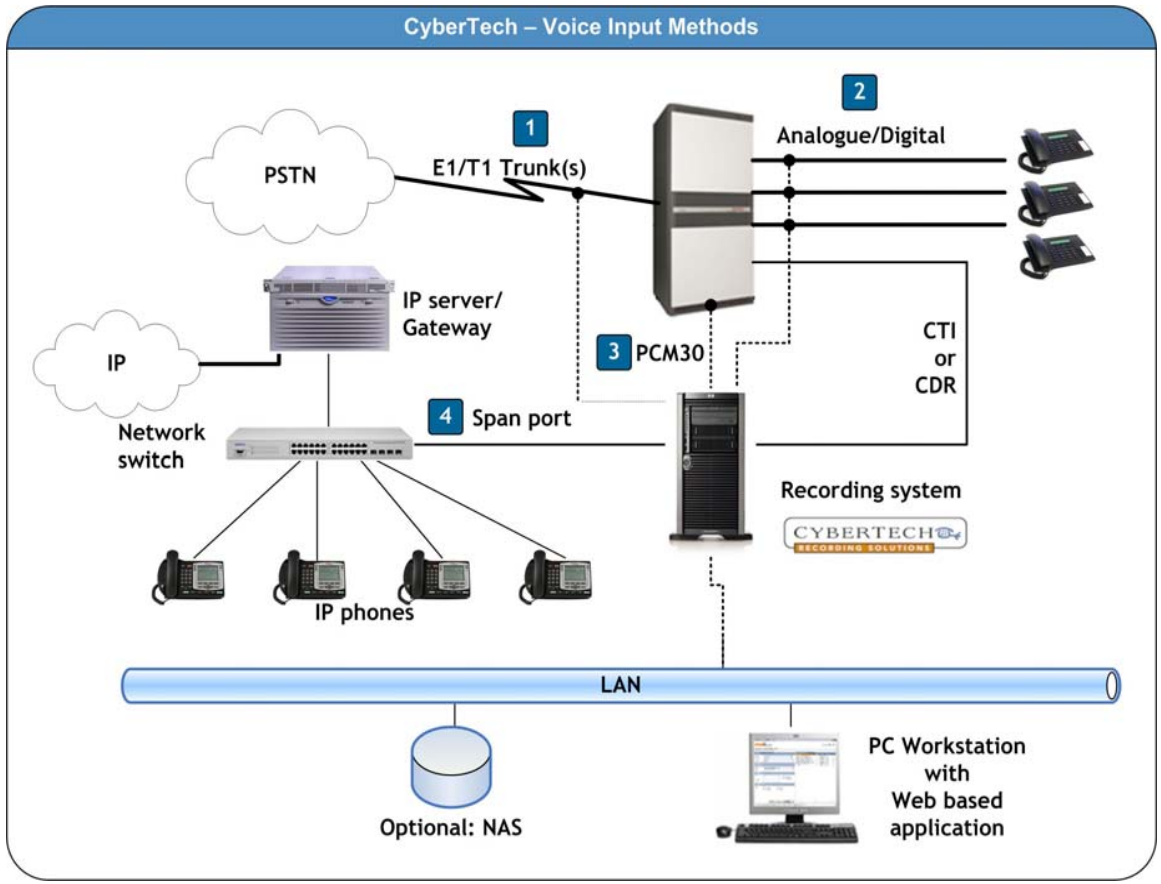
Voice input

The voice input is the most important input of the Recording Solution.

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)

Voice input


CyberTech – Voice Input Methods
PSTN
1
E1/T1 Trunk(s)
2
Analogue/Digital
IP server/
Gateway
IP
3 PCM30
CTI
or
CDR
4 Span port
Network
switch
Recording system
CYBERTECH
IP phones
LAN
Optional: NAS
PC Workstation
with
Web based
application

Data input

Next to the voice capture, additional call data can be captured in three ways:

1. From the D-channel of the line

Each firmware protocol converter is able to decode the available data (D-channel).

For instance: - external number
- username
- all info available on the phone display

Data input – D-channel capture

Supported Systems

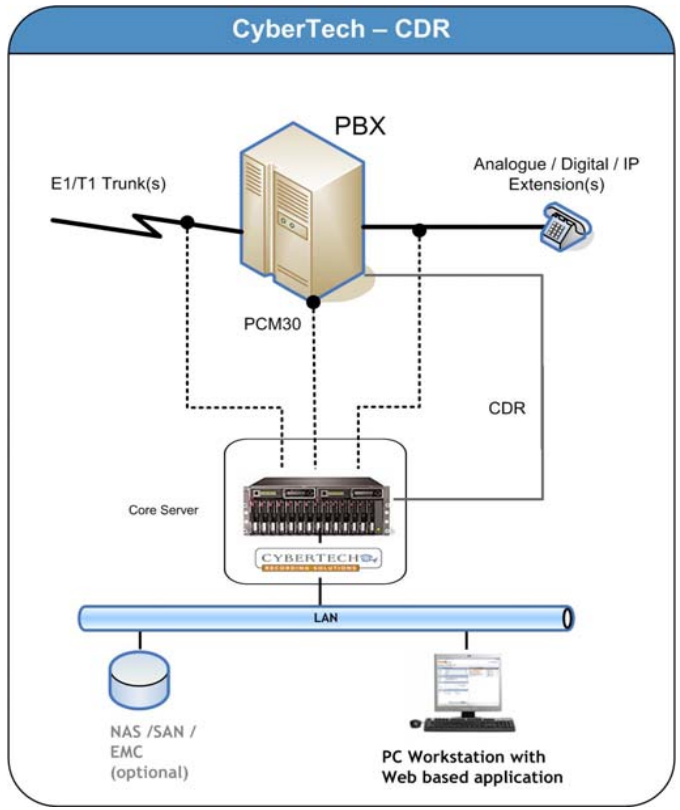
Digital Parallel	- Generic	- Realitis DX 4-wire	**VoIP**	**E1/T1 digital passive trunk**
- Alcatel OmniPCX	- Goldstar	- Rockwell Spectrum	- Alcatel	E1 CCS Trunks
- Ascom Ascotel	- Intertel Axxess	- Selta	- Avaya	T1 CAS Trunks
- Aspect	- ISDN2 ETSI/1TR6	- Siemens	- Cisco	T1 CCS Trunks
- Avaya	- LG Starex-VSP	- Tadicom Coral	- Mitel	
- Bosch Integral	- Nitsuko DX2E	- Toshiba Strata	- Nortel	
- DMS-100 (BRI)	- Nortel	**Digital Serial**	- Siemens	
- Ericsson	- Panasonic KX-TD	- Avaya Index (SDX)	- Ericsson	
- Fujitsu Coral	- Philips/NEC	- Mitel X200/SX2000	- Selta	

The complete list of supported telecommunication platforms for D-channel capture can be found on http://www.cybertechint.com/10272/1/connectivity.html.

Data input - CDR

2. From a CDR output of the PBX

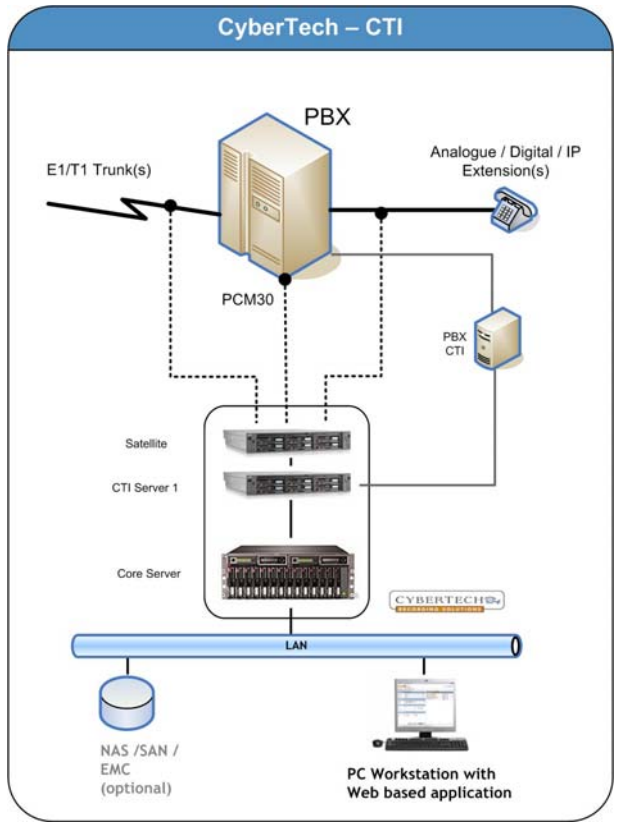
- By adding a feed from the PBX with CDR (Call Detail Records) information to the configuration, additional call data can be added to the database.
- A CyberTech CDR Service is available for several PBX and Trading Room systems.



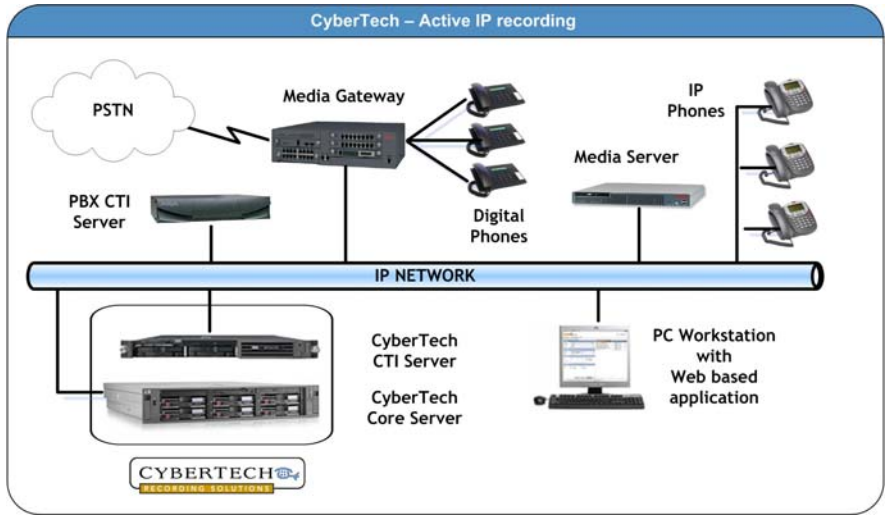
Data input - CTI

3. with a CTI connection

- By adding a feed with CTI (Computer Telephony Integration) to the configuration, a two-way communication between the PBX and the Recording System can be established.
- Additional information about a call can be stored in the database and the recording system can be instructed by the PBX to start recording calls.



Data input – CTI used for active IP recording



The CyberTech Recording Solution has CTI integration for Active VoIP recording available for:

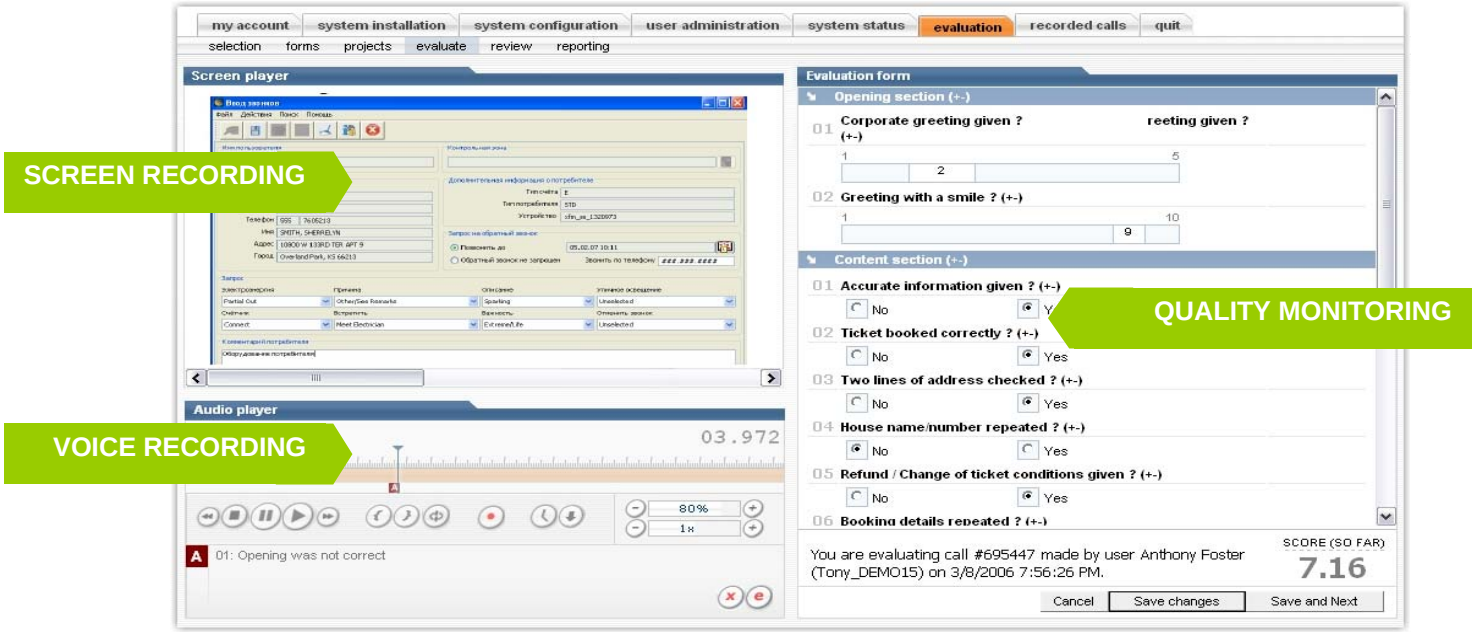
- Avaya DMCC (formerly known as CMAPI)
- Nortel CS1000 (formerly known as MLS)
- Mitel Secure Connector (SRC)

Screen input

- Screen Recording can be optionally added to the Voice Recording
- The screens are recorded using standard VNC software and transferred to a satellite
- The Screen Recorder send their recorded data (call + screen to the Core Server, where the data it is stored centrally

Screen input

In the standard web-based search & replay application, both the audio, evaluation (QM) and screens can be displayed in the same window.



3. Storage

- Calls are stored for
  - Short term on the hard drive.
  - Long term storage for archiving.

- Archiving can be done to any “ Commercial–of–the Shelf” (COTS) media devices.

Short-term Storage

Within the CyberTech Recording Solutions all the voice and call data is stored as WAV files on the systems Hard Disk and as records in a central MySQL Database.

If the ‘encryption’ option is enabled, all stored calls will be encrypted with the 256 bit Rijndael AES audio encryption.

Hard Disk Usage (hours) – Storage Capacities

Compression Type	80 Gb HDD	180 Gb HDD	250 Gb HDD
Uncompressed 64Kb/s	2.625	5.906	8.203
ADPCM 32Kb/s	5.250	11.813	16.406
ADPCM 24Kb/s	7.000	15.750	21.875
GSM 13Kb/s	12.727	28.636	39.773
Fast GSM 13Kb/s	12.727	28.636	39.773
True Speech 8.5Kb/s	19.765	44.471	61.765
Speex 8Kb/s	21.000	47.250	65.625
Speex 5.95Kb/s	28.235	63.529	88.235
Speex 3.95Kb/s	42.532	95.696	132.911
Speex 2.15Kb/s	78.140	17.5814	244.186

Long-term Storage

Archiving Media

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

1. DVD Ram (4.7 GB)
2. Iomega REV disks (35 or 70 GB)
3. Network Attached Storage (NAS) or SAN*
4. EMC Centera

* NAS is a single storage device that operate on data files, while a SAN is a local network of multiple devices that operate on disk blocks.

4. Software

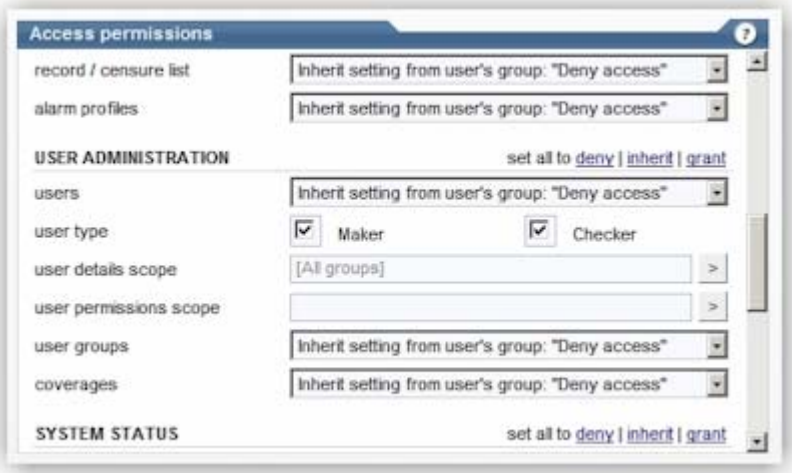
- Completely web-based User Interface (GUI)
- Same GUI for Administration, Users, Supervisors, etc.
- The User Interface has an easy menu structure.
- Depending on the user's profiles, different menu tabs will be available.

Secure Access

The access to the user interface can be protected by enhanced security features such as unique user IDs, alphanumeric passwords, domain authentication, account lockout mechanism, and will comply with most password polices.

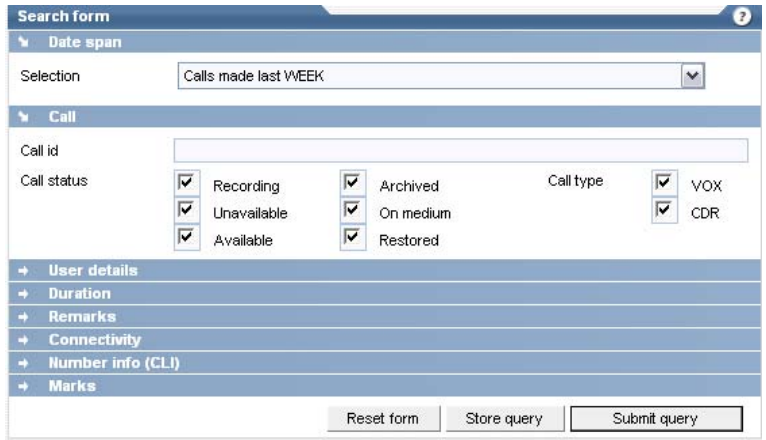
It is possible also via the user interface to grant or deny the access to several system/user settings like:

- Account and User Administration Settings
- System Settings
- Recorded Calls Settings
- Channel Overview Settings

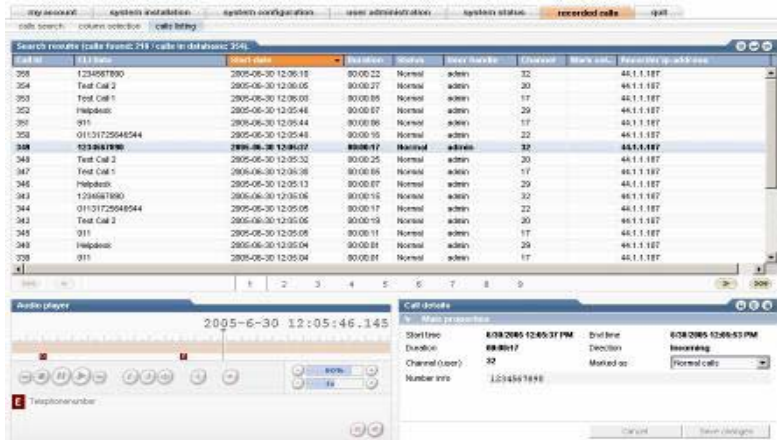


Example: The search for a call

Search Form



Search Results

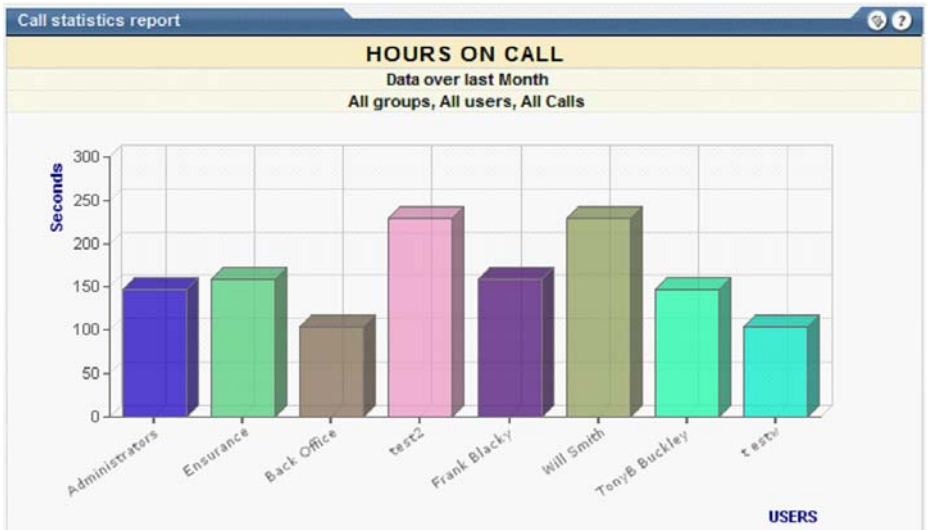


Example: Calls Statistics

CyberTech Recording Solutions can also generate statistical reports using the data stored about the recorded calls. These statistics can be used to measure the efficiency of the organization and the utilization of the recording system.

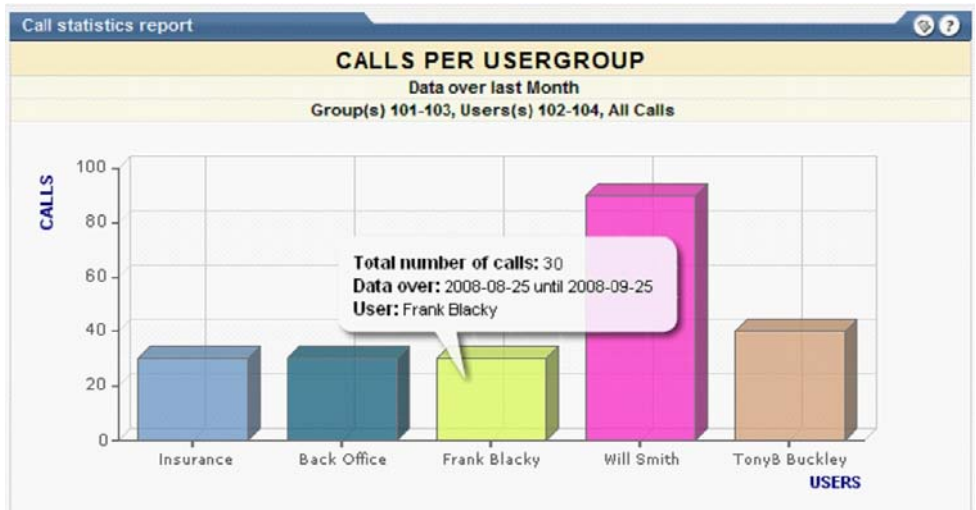
Report types are:

- Percentage utilization
- Call volume
- Average call length
- Hours on call



Calls Statistics is:

- Easy to use – a combination of pre-defined reports, in addition to flexible parameters, enable many different report types
- Cost effective – all data of recorded calls are already available in the recording solution; no external call statistics application is necessary
- Integrated – Call Statistics is an integrated, free-of-charge application feature
- Using a unique drill down feature offering the possibility of zooming on any parts of a graph.



5. Optional Applications

- Optional applications available:
  - For Public Safety: **Incident Replay**
  - For Offline Retrieval: **PC Replay**
  - For Trading Rooms: **Replay to Handset/Replay by Phone**
  - For System Integrators: **Recorder API**
  - For Financial Organizations: **WARP**
  - For Call Centers: **Evaluation**

Incident Replay Application

The Incident Replay Application has been specially developed for the search and replay of digital radio recordings.

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.

Incident Replay Application interface

Incident 3 - Incident Replay (powered by Cybertech)

File Edit Search Play Help

Incident 1
Incident 2
Incident 3

	Start Date	Duration	Call Type	Channel	Direction	Data Type	Number Info	Organisation	Extension
1	2006-03-13 15:15:47	00:04:08	0, normal	13	0, InBound	Trunks	Rolf 242 ges	Organisation	205
2	2006-03-13 15:06:02	00:03:40	0, normal	13	0, InBound	Trunks	Lijn 03 3	Organisation	205
3	2006-03-13 15:02:10	00:02:14	0, normal	13	0, InBound	Trunks	Ton 216 ges	Organisation	205
4	2006-03-13 14:59:33	00:00:17	0, normal	6	0, InBound	Trunks	Sanne 239 ges	Organisation	253
5	2006-03-13 14:58:31	00:00:27	0, normal	13	0, InBound	Trunks	Cock 243 ges	Organisation	205
6	2006-03-13 14:57:00	00:01:05	0, normal	11	1, OutBound	Trunks	Rolf 242 ges	Organisation	209
7	2006-03-13 14:55:31	00:01:29	0, normal	11	1, OutBound	Trunks	Arno 240 ges	Organisation	209
8	2006-03-13 14:45:06	00:02:09	0, normal	13	1, OutBound	Trunks	0347881155 ges	Organisation	205
9	2006-03-13 14:41:04	00:04:01	0, normal	13	1, OutBound	Trunks	Frank 241 ges	Organisation	205
10	2006-03-13 14:35:22	00:00:26	0, normal	4	1, OutBound	Trunks	Rob 204 bel	Organisation	219

MynaVoice/*/*

Volume

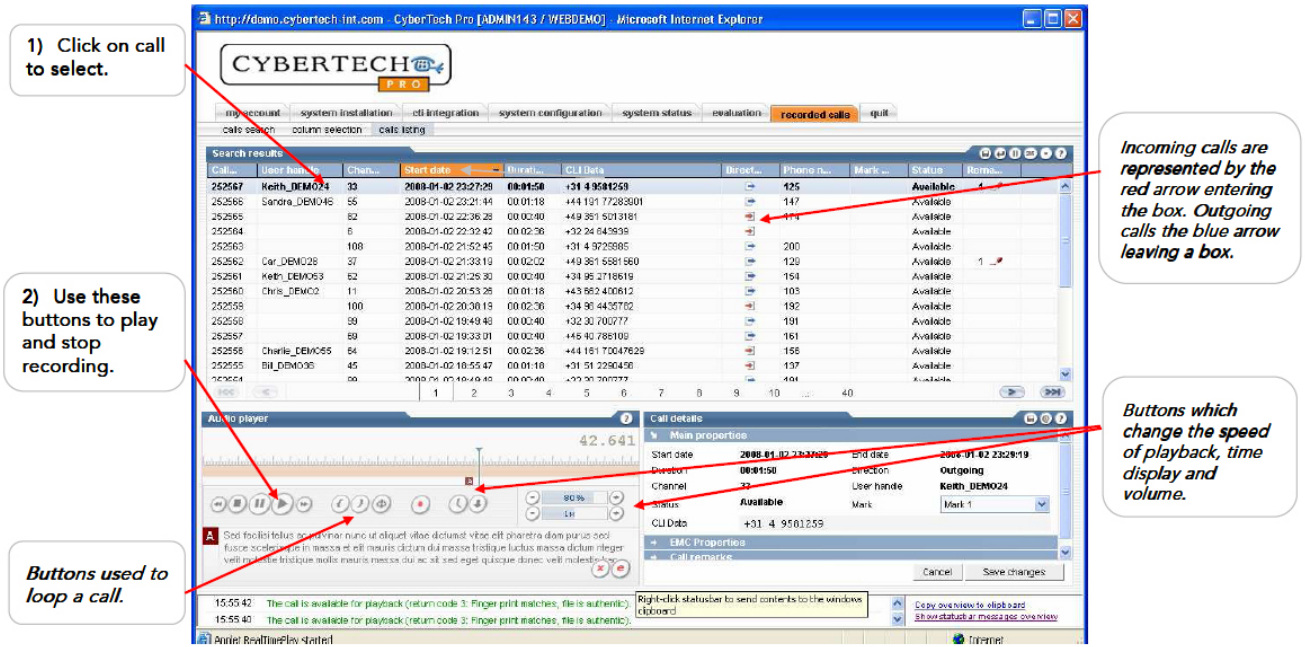
	Mute	Volume	Source	Datatype	Key	Start Date	Duration	Start Play	Call Type	Channel	Direction	Number Info	Organisation	Extension
1			MynaVoice	Trunks	1605129	2006-03-13 14:41:04	00:04:01	00:00:00	0	13	1, OutBound	Frank 241 ges	Organisation	205
2			MynaVoice	Trunks	1605130	2006-03-13 14:45:06	00:02:09	00:04:02	0	13	1, OutBound	0347881155 ges	Organisation	205
3			MynaVoice	Trunks	1605131	2006-03-13 14:55:31	00:01:29	00:14:27	0	11	1, OutBound	Arno 240 ges	Organisation	209
4			MynaVoice	Trunks	1605132	2006-03-13 14:57:00	00:01:05	00:15:56	0	11	1, OutBound	Rolf 242 ges	Organisation	209
5			MynaVoice	Trunks	1605133	2006-03-13 14:58:31	00:00:27	00:17:27	0	13	0, InBound	Cock 243 ges	Organisation	205
6			MynaVoice	Trunks	1605134	2006-03-13 14:59:33	00:00:17	00:18:29	0	6	0, InBound	Sanne 239 ges	Organisation	253
7			MynaVoice	Trunks	1605135	2006-03-13 15:02:10	00:02:14	00:21:06	0	13	0, InBound	Ton 216 ges	Organisation	205
8			MynaVoice	Trunks	1605136	2006-03-13 15:06:02	00:03:40	00:24:58	0	13	0, InBound	Lijn 03 3	Organisation	205
9			MynaVoice	Trunks	1605137	2006-03-13 15:15:47	00:04:08	00:34:43	0	13	0, InBound	Rolf 242 ges	Organisation	205

13-03 15:02 13-03 15:03 13-03 15:04 13-03 15:05 13-03 15:06 13-03 15:07 13-03 15:08 13-03 15:09 13-03 15:10 13-03 15:11 13-03 15:12 13-03 15:13 13-03 15:14 13-03 15:15 13-03 15:16

Channel:13
Channel:11
Channel:6

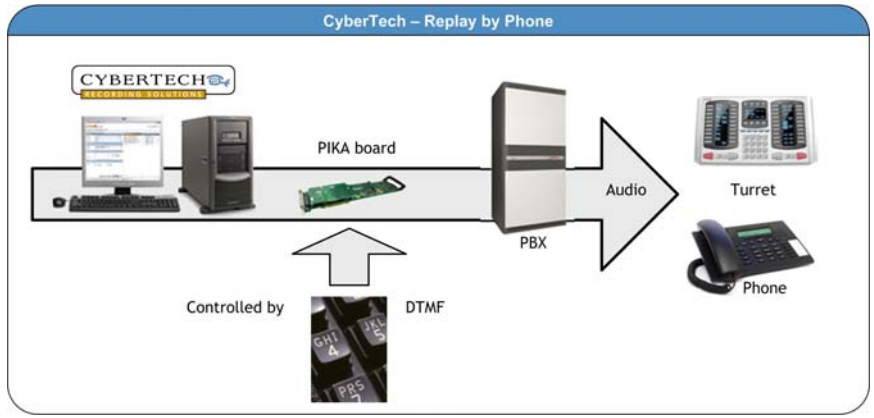
PC Replay Application

The PC Replay Application has the same look and feel as the Web Replay Application with the difference that the PC Replay application is replaying the calls offline (from a DVD-RAM e.g.) and is using the Database copied on a storage medium.

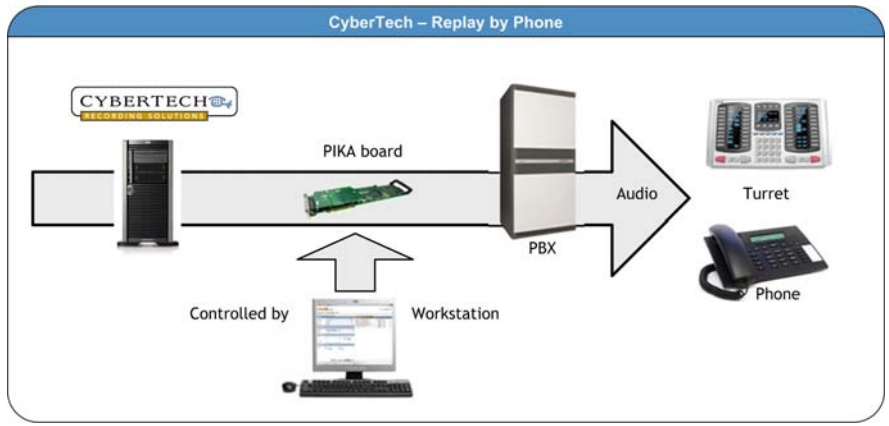


Replay To Handset / Replay by Phone

Replay by Phone: a call can be searched using DTMF buttons on the phone and replayed on the handset.



Replay to Handset: a call can search using the standard Workstation and the audio can be send to a selected handset

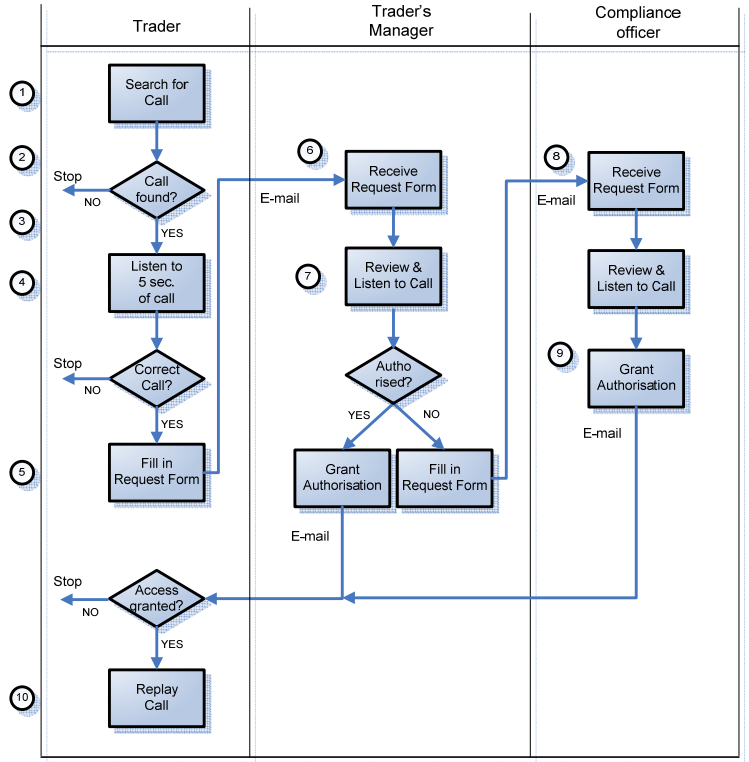


Recorder API

Common functions	• Retrieving user, channel*, call data information • Registering and un-registering of free-seating users • Retrieving audio from the recorder
Access to historical data	• Powerful and flexible search capabilities • Access to all available call data
Modify parts of historical data	• Modify parts of the stored information
Real-time functions*	• Receiving start and stop events • Start/stop recording on demand

WARP (Work Authorization Replay Procedure)

- Provides Compliance with an audited account of individual replay requests
- Enables an authorization chain to be established to allow or reject individual requests for replay
- Avoids the need to employ additional staff to pinpoint the required recordings and puts this control back with the individual requesting the playback.
- Fully automated (avoiding a manual slow process) and tailored to suit individual requirements



Evaluation

The Evaluation Application is integrated into the web-based 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.

The evaluation application consists of 6 parts:

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

CyberTech Evaluation Offers:

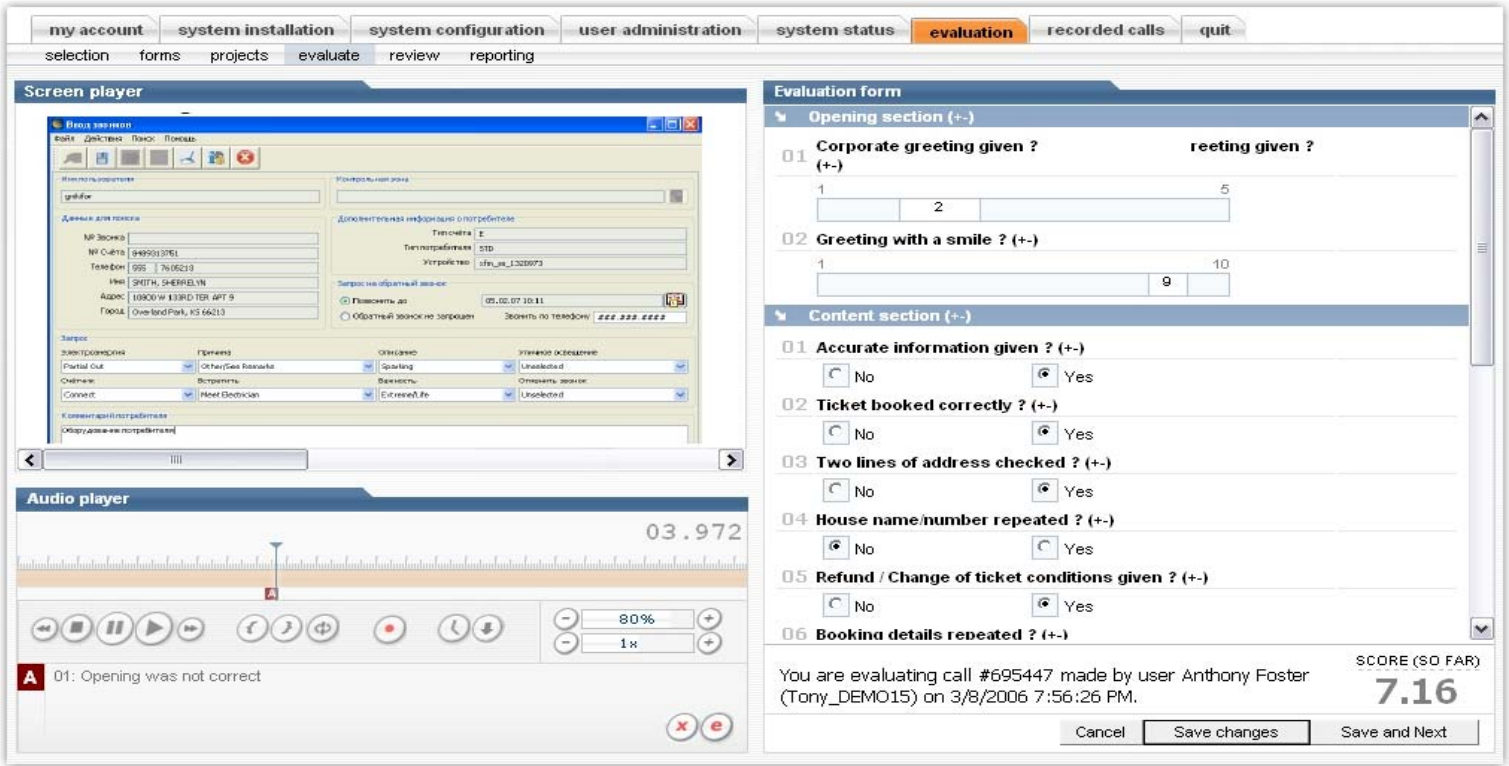
- **Evaluation of Calls & Screen**
  Replay of the Screen Recordings can be integrated in the evaluation of calls to get a total overview of the quality of the interactions.

- **Custom made Forms**
  Flexible creation of evaluation forms with a question library. Configurable
  answer types and weight per question, question can be marked as ‘critical’.

- **Add remarks**
  During evaluation of the calls additional remarks in the call can be added for coaching agents

CyberTech Evaluation in the Web User Interface

As stated before, the evaluation application is accessible via the Web User Interface



6. Summary

The CyberTech Recording Solutions can be summarized by the following features:

- **Capture**
  Of Voice, Data and Screens
- **Store**
  Store for short- and long-time archiving
- **Search**
  Using a Web-based user-interface
- **Replay**
  Using commercial off-the-shelf (COTS) hardware
- **Evaluate**
  Additional applications for QM and Scenario Replay
- **Analyse**
  With Call Statistics

INTERNATIONAL

P.O. Box 75709
1070 AS Amsterdam
The Netherlands
Tel: +31 (0)72 - 566 2 566
Fax: +31 (0)72 - 566 2 567
info@cybertech-int.com

NORTH AMERICA

4 New King Street
Suite 140
White Plains NY 10604
Tel.: +1 (914) 269 4054
Toll Free: (800) 717 1808
Fax: +1 (914) 269-4046
info@cybertech-na.com

UNITED KINGDOM

CyberTech House
Commerce Way
Edenbridge, Kent TN8 6ED
United Kingdom
Tel.: +44 (0)8707 544 514
Fax: +44 (0)8707 544 516
info@cybertech-int.co.uk

ASIA PACIFIC

2/F Shui On Centre
6 - 8 Harbour Road
Wanchai
Hong Kong
Tel.: +852 2824 8179
Fax: +852 2824 8000
info.hk@cybertech-int.com

20 Cecil Street, #14-01,
Equity Plaza
Singapore 049705
Tel.: +65 6823 1357

GERMANY

Herriotstraße 1
60528 Frankfurt am Main
Deutschland
Tel.: +49 (0) 69 677 33 174
Fax: +49 (0) 69 677 33 200
info.de@cybertech-int.com

MIDDLE EAST

Dubai Airport Free Trade Zone
East Wing, 6E Building B
Dubai
United Arab Emirates
info.ae@cybertech-int.com

More information: **www.cybertech-int.com**

CYBERTECH
INTERNATIONAL