

# Data Sheet

## EyeSDN Release 4 Software

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### Overview and Architecture

The innoventif EyeSDN software operates the EyeSDN USB, EyeSDN SIP and EyeSDN Net devices. It is a client/server distributed software application aiming to be both simple and open - even though it is feature rich. Recorded data is most important and standard audio file formats and a straightforward folder layout ensure future ownership of the data.

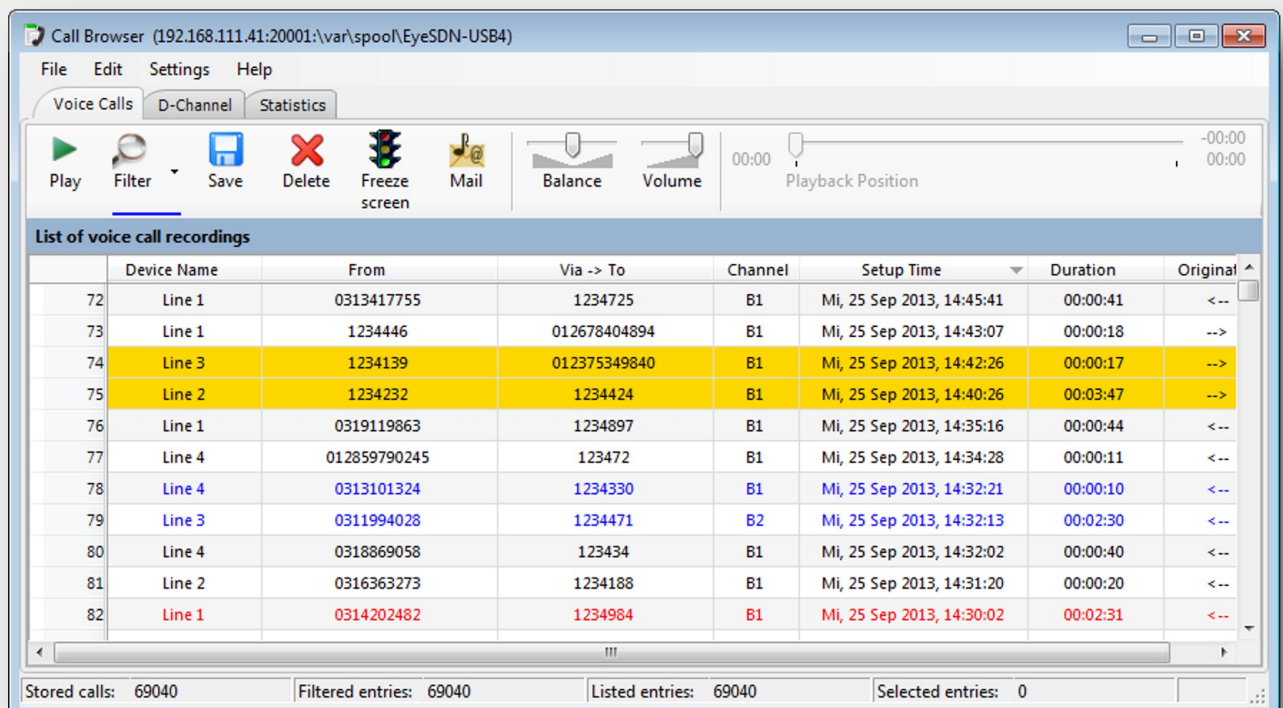
### Listing, Searching and Playing Calls

The *Call Browser* is the main user interface to the EyeSDN USB recording system. It connects to the database server via SQL over a TCP/IP network. The application makes it easy to find and play calls. An extensive search and filter function allows the user to limit the number of calls displayed and a sort function helps to locate a specific recording in the list of calls. Different colours help to distinguish between un-

connected call attempts, FAX calls, encrypted recordings and standard calls. The software allows to annotate recordings by adding a comment, to quickly list all calls between two parties (call history), to select multiple calls and to retrieve or delete these. Phone numbers are automatically substituted with names if found in the phone book. Call statistics give a detailed view of communication parameters over a certain time interval.

The *Interactive Client* is a real-time multi-site call monitor. It reads call and audio data from the recording service via a TCP stream and displays the status of the phone lines. Users can click to select calls in progress to listen to them or to manually control recording of these calls.

The *Configuration Tool* allows administrators to remotely configure the operation of the recording devices, to define the storage and post-processing parameters and to set up automatic e-mailing of calls.



The screenshot shows the 'Call Browser' application window. The title bar reads 'Call Browser (192.168.111.41:20001:\var\spool\EyeSDN-USB4)'. The menu bar includes 'File', 'Edit', 'Settings', and 'Help'. Below the menu is a toolbar with icons for 'Play', 'Filter', 'Save', 'Delete', 'Freeze screen', 'Mail', 'Balance', 'Volume', and a 'Playback Position' slider. The main area is titled 'List of voice call recordings' and contains a table with the following columns: Device Name, From, Via -> To, Channel, Setup Time, Duration, and Original. The table lists 11 calls, with rows 74 and 75 highlighted in yellow. At the bottom, a status bar shows 'Stored calls: 69040', 'Filtered entries: 69040', 'Listed entries: 69040', and 'Selected entries: 0'.

	Device Name	From	Via -> To	Channel	Setup Time	Duration	Original
72	Line 1	0313417755	1234725	B1	Mi, 25 Sep 2013, 14:45:41	00:00:41	<--
73	Line 1	1234446	012678404894	B1	Mi, 25 Sep 2013, 14:43:07	00:00:18	-->
74	Line 3	1234139	012375349840	B1	Mi, 25 Sep 2013, 14:42:26	00:00:17	-->
75	Line 2	1234232	1234424	B1	Mi, 25 Sep 2013, 14:40:26	00:03:47	-->
76	Line 1	0319119863	1234897	B1	Mi, 25 Sep 2013, 14:35:16	00:00:44	<--
77	Line 4	012859790245	123472	B1	Mi, 25 Sep 2013, 14:34:28	00:00:11	<--
78	Line 4	0313101324	1234330	B1	Mi, 25 Sep 2013, 14:32:21	00:00:10	<--
79	Line 3	0311994028	1234471	B2	Mi, 25 Sep 2013, 14:32:13	00:02:30	<--
80	Line 4	0318869058	123434	B1	Mi, 25 Sep 2013, 14:32:02	00:00:40	<--
81	Line 2	0316363273	1234188	B1	Mi, 25 Sep 2013, 14:31:20	00:00:20	<--
82	Line 1	0314202482	1234984	B1	Mi, 25 Sep 2013, 14:30:02	00:02:31	<--

Stored calls: 69040    Filtered entries: 69040    Listed entries: 69040    Selected entries: 0

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## Server Components

The recording service (recS) operates the EyeSDN USB devices and creates audio files in the storage folders on disk.

The audio processing service (apS) can be used to compress the audio files to save disk space, sends recordings to an SMTP e-mail server and performs call matching from external data sources.

The indexing and client interface service (iciS) adds the meta data of recorded calls to an embedded SQL database for later reference by the clients. Client apps access to call data via SQL/TCP connections to the iciS.

## Software Features

### Audio Compression

To save disk space the software can compress the recordings to WAV-files with different audio Codecs. Depending on the Codec an optimal tradeoff between size and quality between 128 kbits/s (G.711) and 8 kbits/s (low quality). Good choices are 24 kbits/s stereo or 13 kbits/s mono.

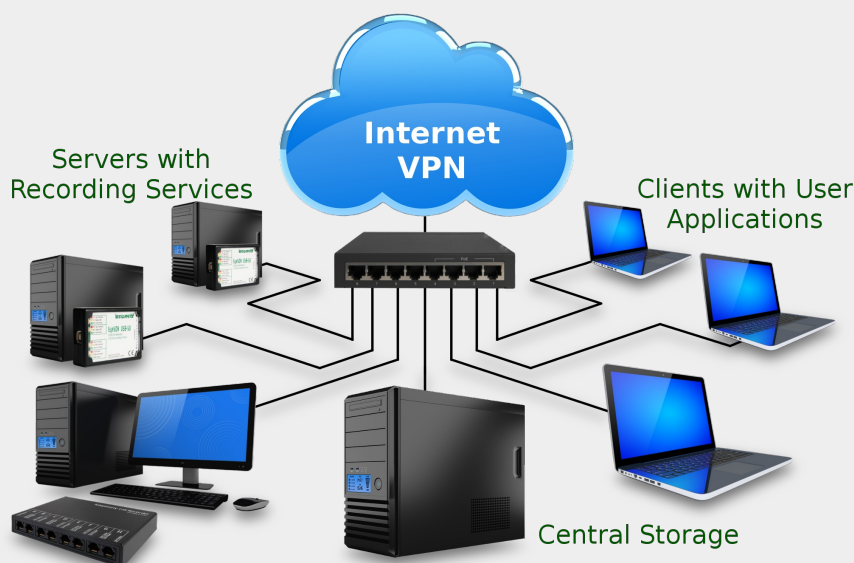
### Filter Rules

The user can set up a list of filter rules to specify which calls should be recorded. Parameters that can be used in the filter rules are: phone numbers, period, day of the week, time of day and call direction and external data fields. Filters can be defined to randomly store a certain percentage of calls to pick call samples for quality management.

Filter rules also specify how a call should be handled by the software, specifically if it should bypass audio compression to allow later FAX decoding or if the call should be e-mailed to a user.

### E-Mail Transmission

The software can automatically send recorded audio files to specific e-mail addresses (filter rules define the extension number/e-mail address relationship). The users then receive recordings of their calls in the e-mail inbox and do not need to install EyeSDN client software. The server can either delete the recording after e-mail transmission or keep the call in the storage system.



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## *FAX Decoding*

Recordings of FAX calls can be converted to and viewed as PDF files from *Call Browser* or e-mailed as PDF attachments. The FAX converter supports Group 3 Fax machines using V.21, V.27ter, V.29 or V.17 modems with one- and two-dimensional image compression (MH, MR, MMR) with or without error correction (ECM).

## *Line Status Monitor*

The *Interactive Client* can be used to show the channel utilisation in real-time. It gives the number of total channels, the number of connected channels and the number of channels occupied by call setup or release.

## *D-Channel Monitoring*

Both *Call Browser* and *Interactive Client* have functions to create and display D-channel trace files in Wireshark (an open-source network analysis software) to diagnose issues of the ISDN line.

## *Time and Volume based Storage Quota*

If calls should only be stored for a certain period of time or only using a certain amount of disk space the software can be

configured to automatically enforce a storage quota based on these criteria.

## *Manual Recording Control*

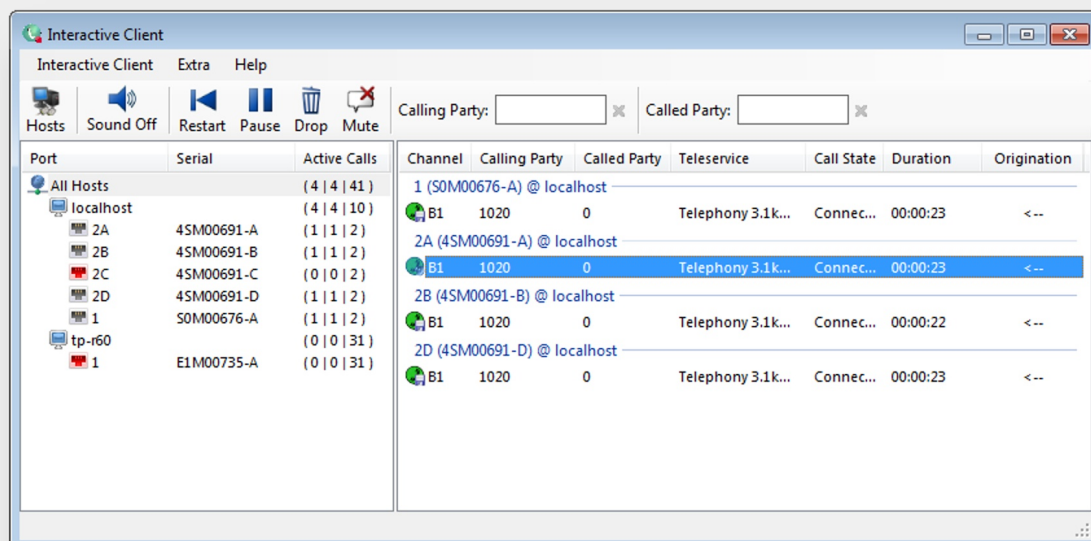
The *Interactive Client* allows users to manually control which calls or which parts of a call should be recorded. There are a number of modes to adjust the combination of automatic and manual recording to the user's need.

## *DTMF Decoding*

The software will detect any DTMF digits present during the call and add them to the call's meta data. This can help to diagnose problems with the menu selection in voice response systems or can be used to identify callers in automatic emergency call systems. Also DTMF can be used for manual recording control. This way a calling party may opt-out of having the call recorded.

## *Phone System Integration via TAPI or CDR*

Since many phone systems are configured to not present the extension number on outgoing calls the software can retrieve the extension information from a phone system



Interactive Client showing calls in progress.

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via TAPI if it is suppressed in the ISDN signalling. A working TAPI 2.0 driver for the phone system is needed for this.

## *Automatic Fault Reporting*

Since users require a high reliability of the recording system, faults should be addressed quickly. Therefore the software can be configured to send e-mails to an administrator if devices are disconnected, phone lines are faulty or the software detects any other problems.

## *Access Control*

Recorded calls contain very sensitive information. So access to the recordings should be limited to a group of legitimate users. The EyeSDN USB software allows to do that by two methods: Call Encryption and limiting the functions of the client programmes (e.g. some users may not delete calls). The restricted user interface can be configured for each Windows user and relies on Windows user accounts.

## *Multi-Site Installations*

Larger organisations may have EyeSDN devices at different locations. The collector service can be used to retrieve call recordings from the remote sites and add them to a central storage. This way data from different branches of a company can be consolidated at the head quarters.

## **Further Information**

- <http://www.innoventif.com>
- [info@innventif.com](mailto:info@innventif.com)
- EyeSDN USB devices data sheets
- EyeSDN SIP data sheet

## *Export of CDR Data*

The *Call Browser* can export the list of calls to a CSV file at any time. This file can then be imported into a database or opened in a spreadsheet application.

## *Statistics Reports*

Users can define and save complex statistics reports to easily extract valuable information from the call database. Statistics can be reported for arbitrary time spans with lines for time intervals like days, weeks, months or quarters. Columns can show counts or min/max/average values for each CDR field.

## **Device Support**

The EyeSDN Software can operate the EyeSDN USB, EyeSDN SIP and EyeSDN Net device families. EyeSDN USB-S0/4S/A2/A8/E1, EyeSDN SIP and EyeSDN Net-E1 devices can be mixed and operated simultaneously.

## **Operating System Support**

The EyeSDN Release 4 Software can run on Microsoft Windows XP, Windows Vista, Windows 7, Windows 8, Windows 8.1, Windows Server 2003, Windows Server 2008 and Windows Server 2012. Linux packages are offered for server components only.

## **presented by:**

