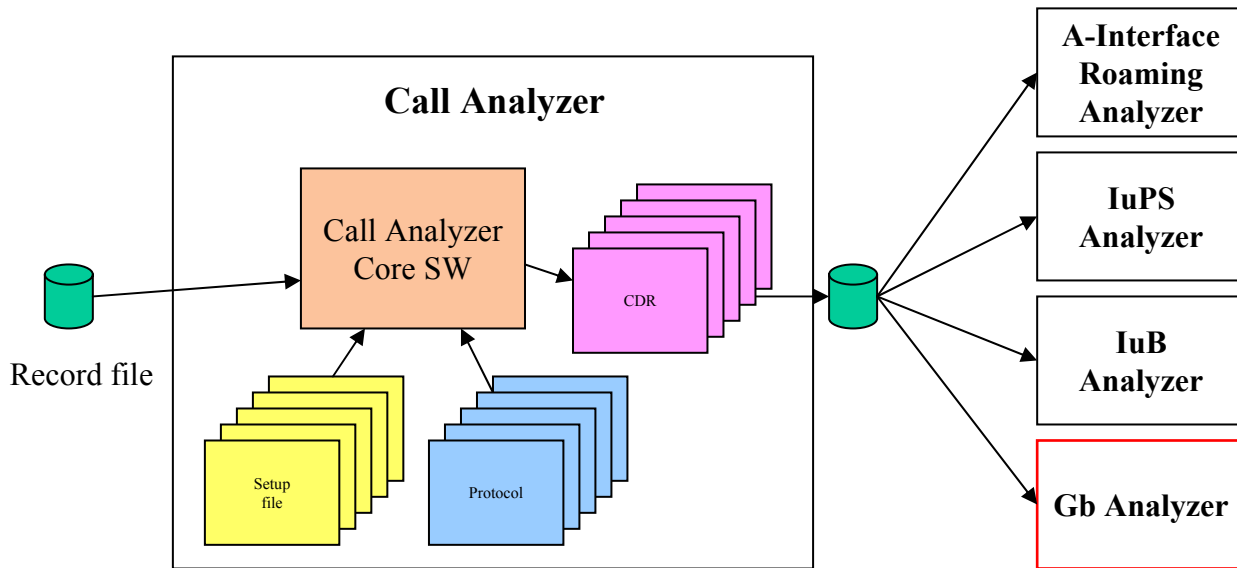




Call Analyser

GB Analyzer

Call Analyzer product family





GB Analyzer

- **Analysis of the performance of the GPRS network**
- **Analyses both own subscribers and roamers**
- **Key features:**
 - **Complete analysis of routing area update**
 - **Complete analysis of attach and PDP activation**
 - **Analysis of traffic patterns per protocol**
 - **Throughput rates per protocol, per cell and per user**
 - **Analysis of higher layer protocols**
 - **Throughput per cell**
 - **Detailed analysis of failures**
 - **Easy access to protocol data**
- **Can use data from Gb, Gn, Gp or Gi interface.**
- **Functions depend on the protocol**

Based on CDRs from Call Analyzer

Call Analyzer 1.3 - C:\A record files\Demo_GB.rf5

Call Analyzer - CDR Database

Call Records

Frame	direction	mnc	mnc	lac	rac	cid	imsi
11	1	520	01	1202	1	8394	
12	1	520	01	1202	1	8394	
13	1	520	01	1202	1	8394	
14	1	520	01	1202	1	8394	
16	0						52001130
17	0						
19	0						52001130
21	0						
22	0						
23	0						52001130
24	0						
25	0						
26	1	520	01	1202	1	8394	
27	1	520	01	1202	1	8394	
28	1	520	01	1202	1	8394	
31	1	520	01	1202	1	8394	
32	1	520	01	1202	1	8394	

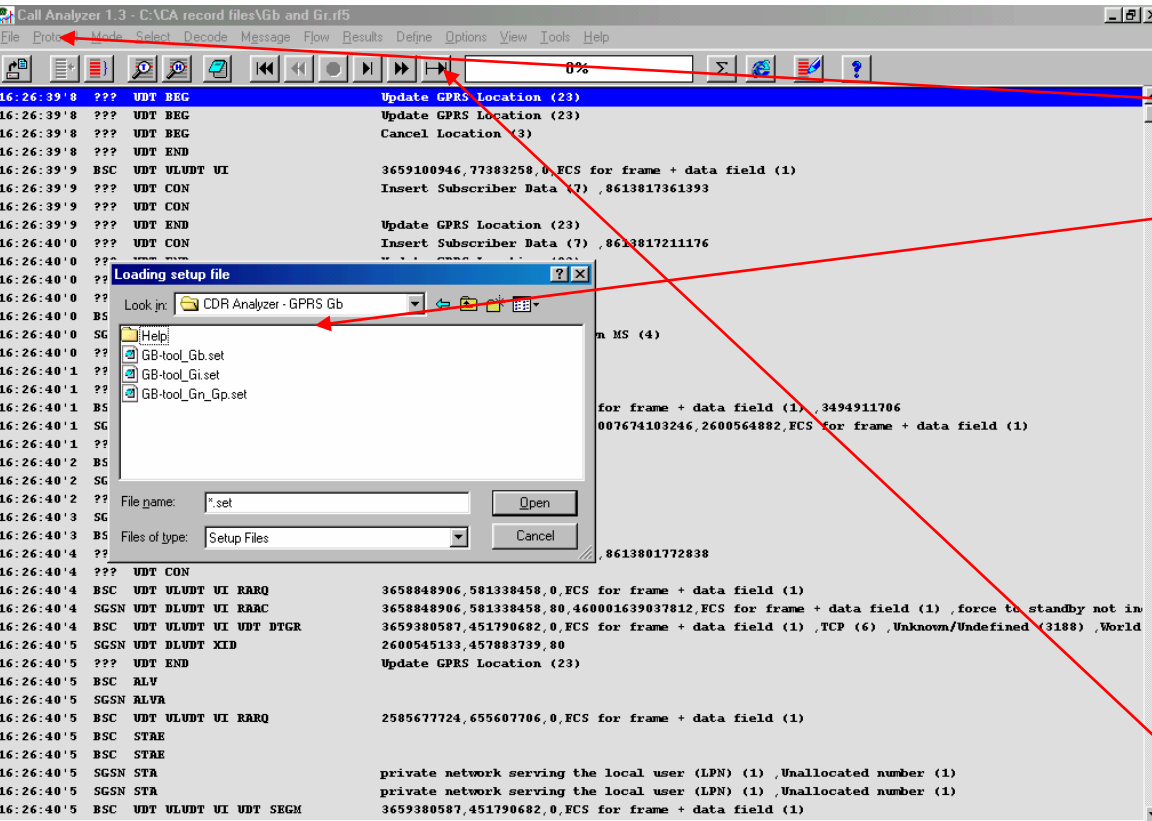
Query :
Refresh

5452 Records
Export Ok

32, 448790528, 520011300102424
32, 448790528, 7388997, 2435955906

- Easy to add new features
- Protocols already available
- User defined flows for generation of CDRs
- Data are available for detailed analysis
- Flows and events from the Gb analyzer are available for search and filter
- Fast implementation of new features

Generating CDR with Call Analyzer



1. Load the relevant protocol

2. Load the relevant setup file.

NOTES:

Setup files are loaded from the folder where the tool is installed

Functions depend on the protocol

3. Scan the file

Processing the CDRs

1. Load the CDR file.

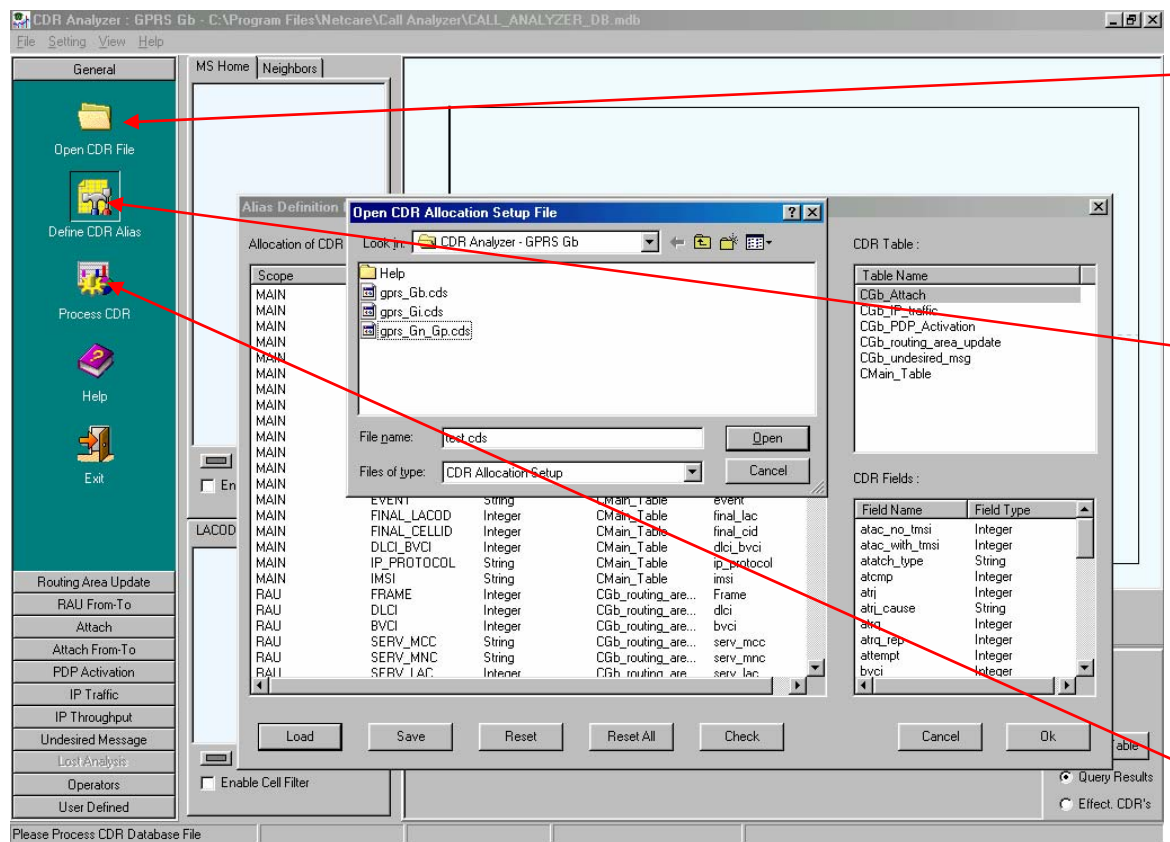
Call Analyzer generates:
c:\program files\netcare\call
analyzer\Call_Analyzer_DB.mdb

2. Load the relevant .cds file

NOTE:

By saving the .cds file it is always
selected until a new .cds file is
loaded

3. Process the CDR



General functions

Apply filter for the last network the subscriber was active in (e.g. to see only subscribers taken from a competitor)

Apply filter for home network

Select function

The screenshot shows the Netcare CDR Analyzer interface. On the left, a sidebar contains several function buttons: 'Attempts Per MS Home', 'Attempts Per Neighbor', 'Attempts and Success per cell', 'Success Per Cell', 'Success Per Type', 'RAU From-To', 'Attach', 'Attach From-To', 'FDP Activation', 'IP Traffic', 'IP Throughput', 'Undesired Message', 'Lost Analysis', 'Operators', and 'User Defined'. The main window is divided into several sections. At the top, there are tabs for 'MS Home' and 'Neighbors'. Below these are filter checkboxes for various countries and operators, such as 'China, China Mobile GSM', 'Australia, Telstra Mobile Comms', 'Germany, D1 DeTe Mobil', 'Italy, Telecom Italia Mobile TIM', 'Singapore, Singapore Tel. GSM', 'Switzerland, Swisscom NATEL', 'Turkey, Turk Telekom Turkcell', and 'UK, Orange'. There is also an 'Enable MS Home Filter' checkbox. Below the filters, there are dropdown menus for 'LACOD-Cells', 'DLCI', and 'IP pr.'. A table below these dropdowns shows selected filters: 'Lacod - 6244', 'Lacod - 6245', and 'Lacod - 6246'. The 'Enable Cell Filter' checkbox is also present. The main area displays a bar chart titled 'RAU Success Rate vs. LACOD-Cell'. The chart shows success rates for various LACOD-Cells, with two data series: 'Success Rate excl_repeat' (red bars) and 'Success Rate incl_repeat' (blue bars). Below the chart is a table with columns: 'LAC-Cell', 'Initial_attempts', 'Repeated_attempts', 'Total_attempts', and 'Success'. The table data is as follows:

LAC-Cell	Initial_attempts	Repeated_attempts	Total_attempts	Success
6244-24609	7	0	7	7
6244-24610	7	0	7	7
6244-24611	3	0	3	3
6244-24625	3	0	3	3
6244-24626	17	0	17	17
6244-24627	6	0	6	6

At the bottom of the interface, there are buttons for 'Refresh Results', 'Copy Graph', and 'Export Graph'. The status bar at the very bottom shows: 'Gb interface CDR | Total Records : 3866 | Query Results : 193 | Effected CDR Records : 1037 | Table : CDR Query'.

Graphical results

Tabular results

Apply filter for LACOD-cells, DLCI, IP protocol or IP address

All filters can be activated for all reports

Routing Area Updates

Select:

- Per cell
- Per MS Home
- Attempts
- Success
- Rejects
- Delay
- Etc



CDR Analyzer : GPRS Gb - C:\Program Files\Netcare\Call Analyzer\CALL_ANALYZER_DB.mdb

File Setting View Help

General

Routing Area Update

Success Per Type

Success Per MS Home

Success Per Neighbor

Delay Per MS Home

Delay Per Neighbor

Delay Per Cell

RAU From-To

Attach

Attach From-To

PDP Activation

IP Traffic

IP Throughput

Undesired Message

Lost Analysis

Operators

User Defined

MS Home Neighbors

* China, China Mobile GSM *

* Unknown *

Australia, Telstra Mobile Comms

Germany, D1 DeTe Mobil

Italy, Telecom Italia Mobile TIM

Singapore, Singapore Tel. GSM

Switzerland, Swisscom NATEL

Turkey, Turk Telekom Turkcell

UK, Orange

Enable MS Home Filter

IP protocol IP addresses

.

IP Address Filter

RAU Success Delay vs. LACOD-CI

Refresh Results Copy Graph Export Graph Page: 1/7

LAC-CI	Avg Delay	Initial_attempt	Success	Success Rate
6244-29825			1	0
6245-21777			1	0
6244-5425			1	0
6246-12321	20322	2	1	50
6244-25953	16565	1	1	100
6245-16435	15324	2	2	100

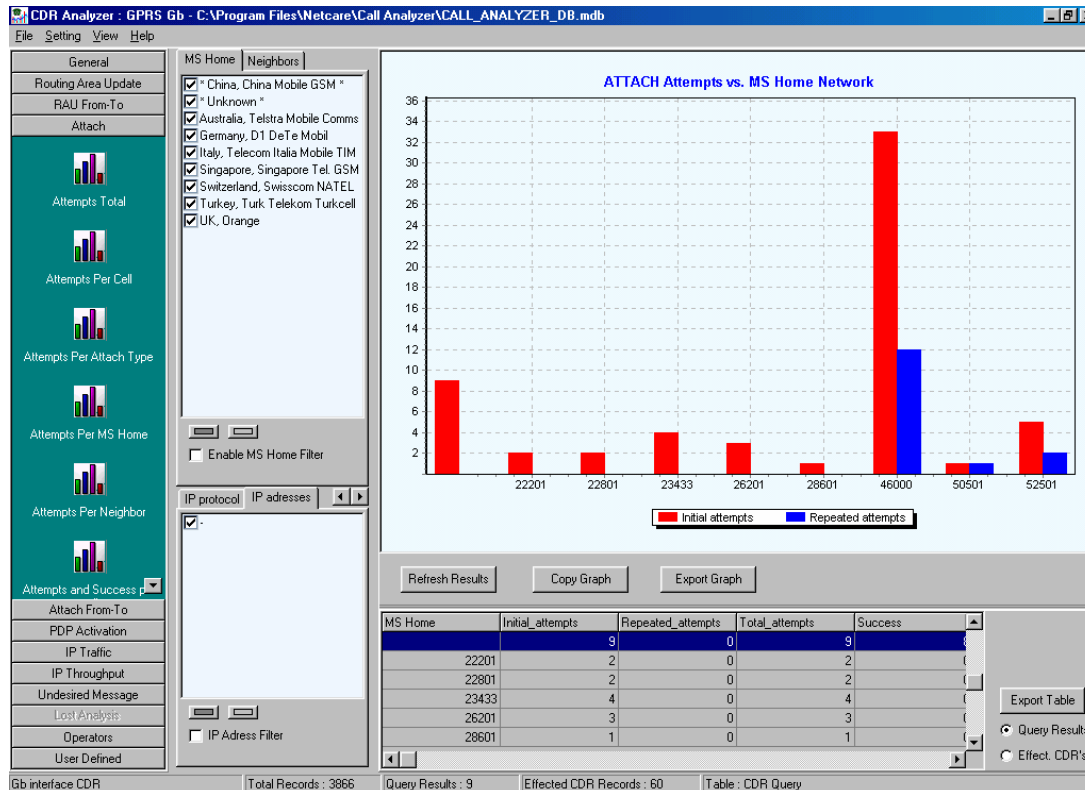
Export Table

Query Results

Effect CDR's

Gb interface CDR Total Records : 3966 Query Results : 193 Effected CDR Records : 1037 Table : CDR Query

Attach Analysis

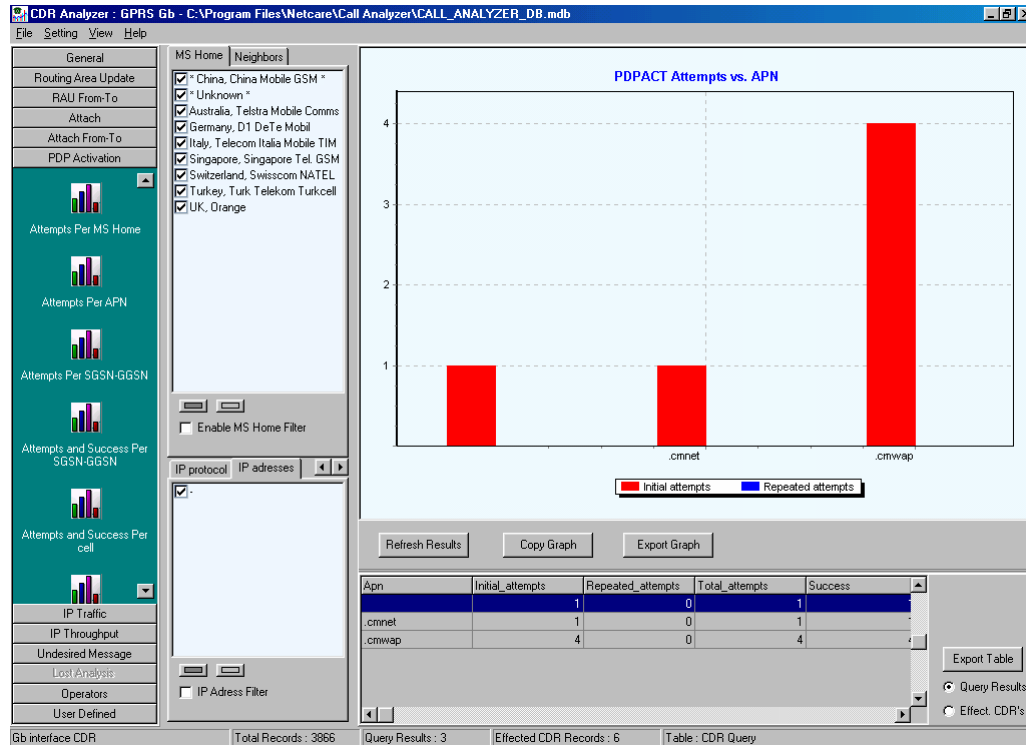


Find out all details about attach and attach failure in your network
e.g. per cell, per type, per MS home, per neighbour, per failure cause etc. etc.

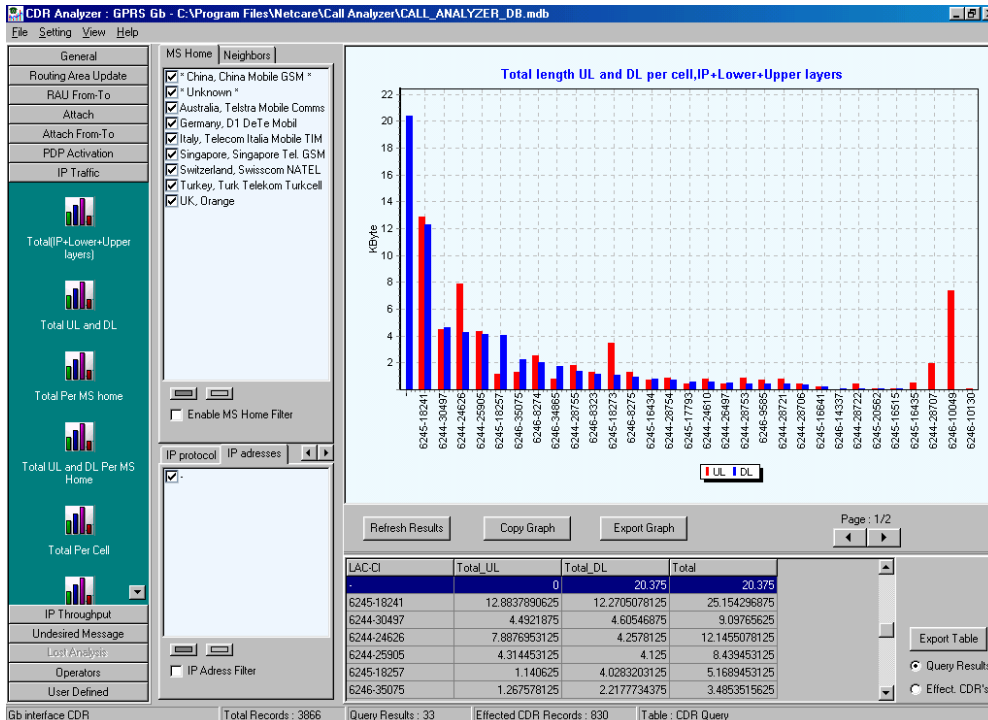
Analysis of PDP activation

Select:

- Per cell
- Per MS Home
- Attempts
- Per SGSN
- Success
- Rejects
- Delay
- Etc

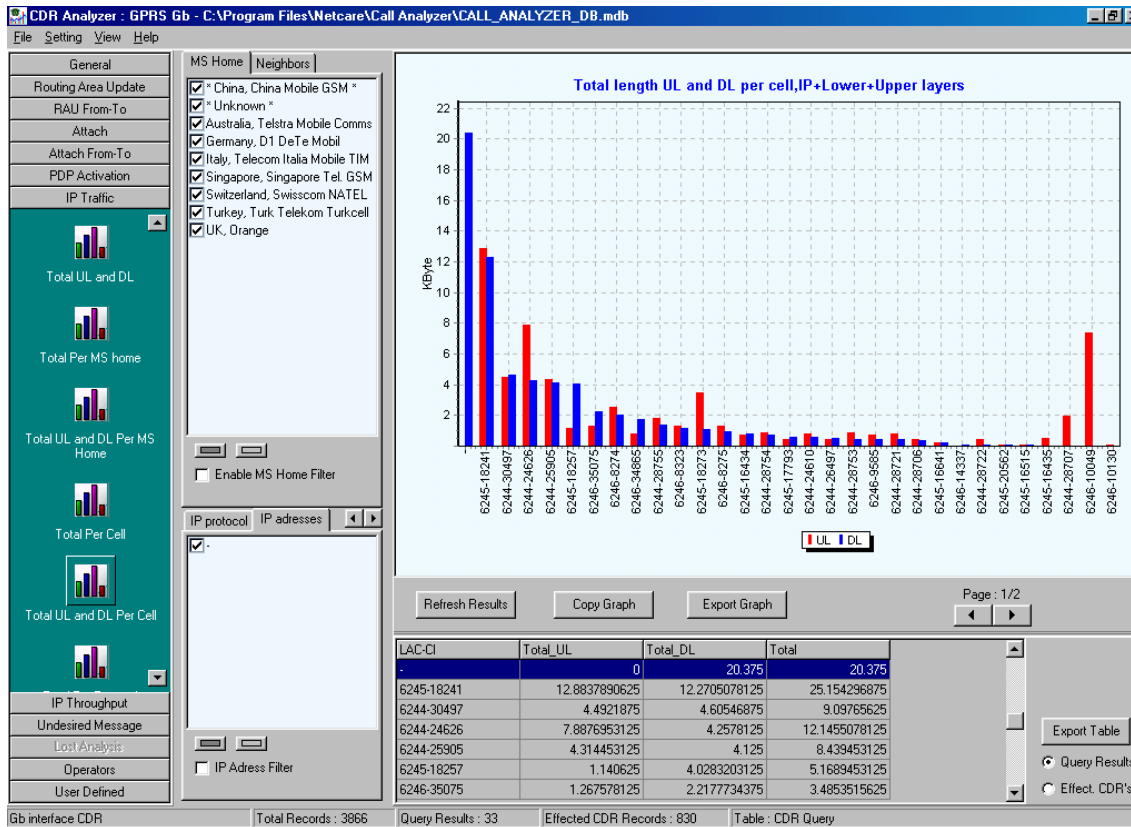


Traffic analysis



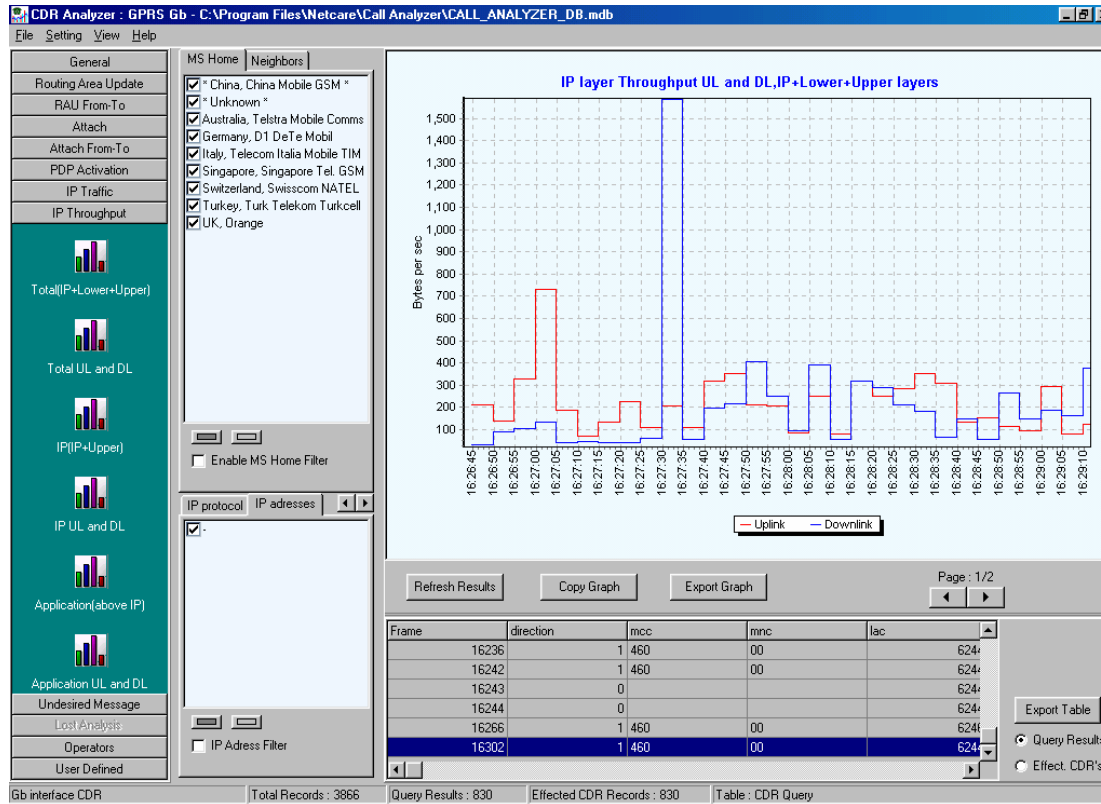
- What type of traffic is generated
- Traffic per cell
- Traffic per DLCI
- Traffic per roamer
- Total traffic uplink and downlink
- Uplink and downlink traffic per protocol
- Etc.

Traffic per cell



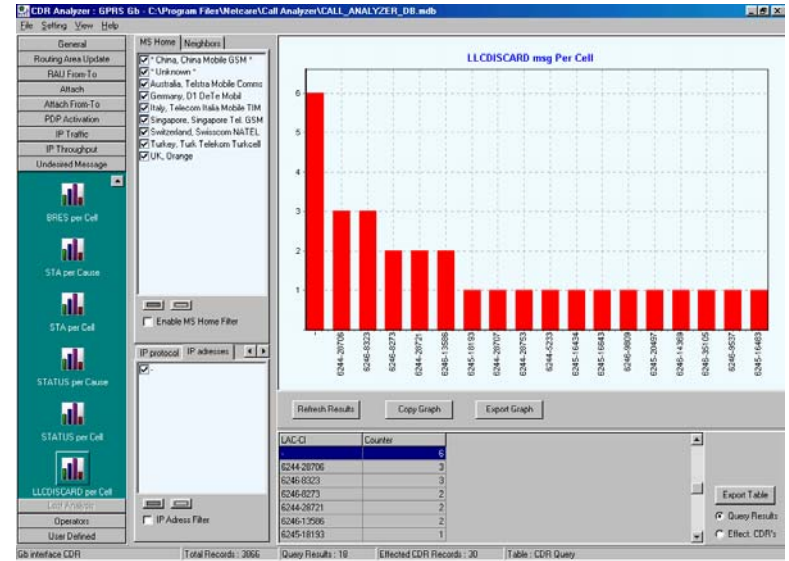
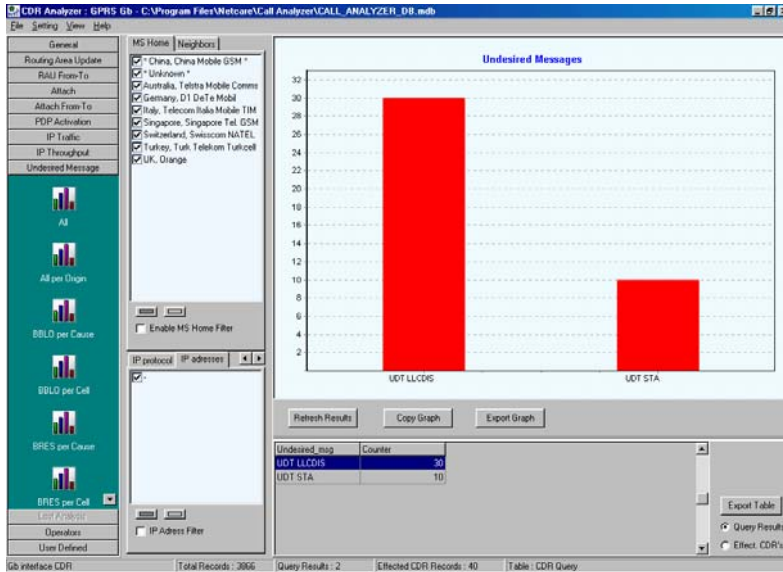
Detailed analysis of traffic and traffic types per cell

Throughput analysis



See throughput per protocol, per cell, per DLCI or any other analysis of throughput rates

Network problems



Easy trouble shooting when the failure type and the location (e.g. cell) can be selected

Detailed results

CDR Analyzer : GPRS Gb - C:\Program Files\Netcare\Call Analyzer\CALL_ANALYZER_DB.mdb

File Setting View Help

General

Routing Area Update

RAU From-To

Attach

Attach From-To

PDP Activation

IP Traffic

IP Throughput

Undesired Message

BRES per Cell

STA per Cause

STA per Cell

STATUS per Cause

STATUS per Cell

LLCDISCARD per Cell

Local Analysis

Operators

User Defined

MS Home Neighbors

LLCDISCARD msg Per Cell

6

6246-35105

6246-5637

6245-16483

User Definitions

Queries Others

Own Network Code : 46000

Points per Page on Graph : 30

Interval for throughput calculation(sec) : 5

Ignore Previous Processing Results

DAD 3.6

Enable MS

IP protocol IP

.

IP Address Filter

6246-13586 2

6245-18193 1

Apply Cancel Ok

Export Table

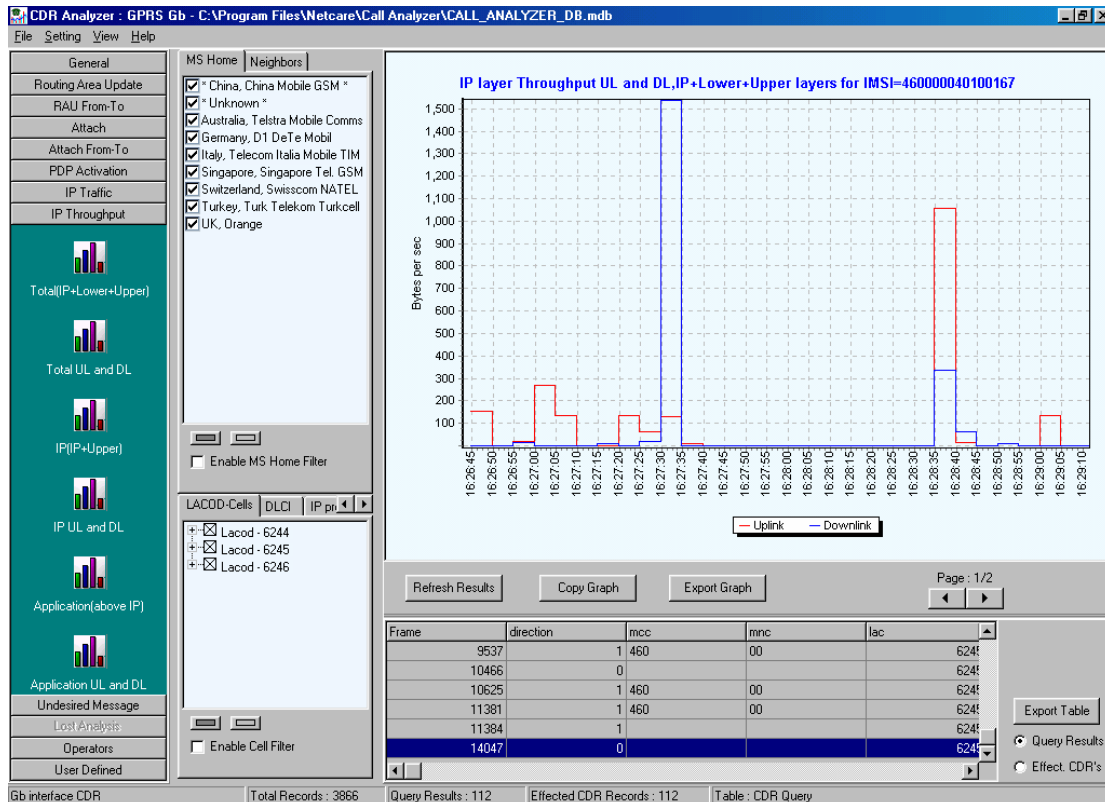
Query Results

Effect. CDR's

Total Records : 3866 Query Results : 18 Effected CDR Records : 30 Table : CDR Query

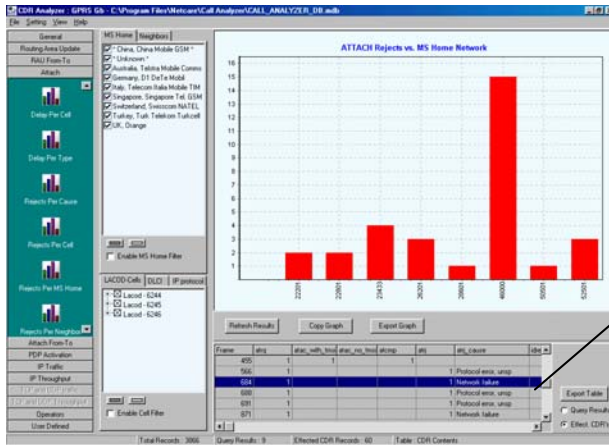
In settings you can select if a double-click on a CDR should jump to Call Analyzer to display the transaction for the selected CDR or if you want to see individual history of the subscriber

Subscriber details



If “show individual history” is selected activities like throughput can be seen per subscriber

Call trace



The screenshot shows a detailed view of a CDR listing. The table has columns: DA, DT, ST, S, SRC, DST, MSISDN, MS, MSRN, and MSISDN. The data rows are: DA: 21: 21: 4 SRC: 001 DST: 00001 MS: 8780 MSRN: 11 948997937; DA: 21: 21: 4 SRC: 001 DST: 00001 MS: 8780 MSRN: 11 948997937; DA: 21: 21: 4 SRC: 000 DST: 00001 MS: 8780 MSRN: 11 948997937.

DA	DT	ST	S	SRC	DST	MSISDN	MS	MSRN
21: 21: 4	21: 21: 4	21: 21: 4	21: 21: 4	001	00001	001	8780	11 948997937
21: 21: 4	21: 21: 4	21: 21: 4	21: 21: 4	001	00001	001	8780	11 948997937
21: 21: 4	21: 21: 4	21: 21: 4	21: 21: 4	000	00001	001	8780	11 948997937

A simple click to see activities per subscriber in CDR listing, and a simple click on the CDR to give you the protocol details