## **Call Analyser**

Call Analyser is an easy to use analysis software package which automates problem isolation and optimisation of SS7 based signalling networks. The revolutionary software tracks the message sequences of all calls across all interfaces and displays the results for each flow. Using this method each call can be analysed to show where the transaction broke down or suffered a long delay.

## **Key Features**

- Automatically traces a call over multiple interfaces and multiple protocols
- Exposes problems and bottlenecks within a signalling transaction
- Real-time protocol analysis (Network Optimiser and Ocean only)
- Support most common file formats for post processing
- Graphs & counts multiple message sequences so problem can be scooped and prioritised
- Quantifies the frequency of the obscure erroneous message sequences that it has found
- User definable message sequences for analysis of specific problems
- Supports all major protocols for networks such as GSM, GPRS, CDMA, IN, IP, UMTS



Figure 2. Frequency of message sequences over time

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Figure 1. Complete call trace on all interfaces

Analysis of message sequences instead of just counting cause values allows detailed information about the nature of incorrect signalling. In mobile networks this method will show when a call is dropped by showing when in the message sequence the clear request is received, e.g. before or after the traffic channel is assigned.

Flow-Event	Trequency	Bate	Delay
Call_Attempt	422	100.00 +	0.000
ACH	344	01.52 9	2.830
ABC	179	42.42.4	9.407
ASM	a	0.71 +	0.961
SAM_after_IAM_or_IAI	19	2.08 4	0.005
SAU_after_IAE_or_IAI	3	1.18 t	0.004
SAO_after_ACE	a	0.00 +	0.000
Clear_forward_after_answer	- 34	8.05 1	20.597
Clear_backward_after_answer	25	5.92.4	28.187
Other Selease after answer	4	1.42.4	9.952
Timeout_after_anguer	۵	0.00 4	0.000
CF1_after_IAM_or_IA1	19	4.50 1	1.081
CLF_after_IAE_or_IAI	16	3.79 1	4.602
STB_after_LAB_or_JA1	6	4 29.1	1.843
ADI_after_IAM_or_IAI	0	0.00 +	0.000
109_after_IAB_or_IAI	٥	0.00 4	0.000
IAI_or_IAI	a	0.00 4	0.000
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Figure 3. Count of incorrect message sequences



The duration of each phase of the call is shown in a histogram so you can instantly see how many of each transaction suffers from which length of delay. This presentation shows whether the majority of calls experience this bottleneck or just a few calls. This unique feature allows timing measurements across the switch due to the complete call trace feature thus allowing to measure the time e.g. from an IAI on the ISUP interface to the paging command on the A interface, or the timing between a paging response on the A interface to the time when the traffic channel is assigned on the abis interface.

In case of call details for calls with a long delay is required a simple double-click takes you from the timing analysis directly to the call trace for the calls in question.

For simple overview of network performance a graphical presentation of the flow results are available for each type of transaction. This feature creates a graph that easily visualises what part of the network that causes the problems.



Figure 4. Timing analysis



Figure 5. graphical presentation of call flows

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