ALIBI VERIFICATION WITH CELLULAR NETWORK ANALYSIS

R&S®NESTOR cellular network analysis software supports law enforcement agencies in alibi verification by analyzing mobile network traces. R&S®NESTOR gives users reliable confirmation of whether an individual's mobile phone was at a specific location at the time of a crime.

Typical example of a crowded, not fully monitorable alibi location

Your task

It is not unusual for potential suspects to claim they were in a crowded, difficult-to-monitor location at the time of a crime – a location not monitored by CCTV, for instance. In order to confirm the alibi, the location has to be checked by other means such as mobile phone traces. Additionally, alibi verification usually takes place long after the crime (weeks, months, or even years). The network environment could have changed in the intervening time, meaning that cells may no longer be available at the time of the alibi investigation.

Considering these difficult conditions, law enforcement agencies require efficient solutions for alibi verification that provide reliable information to support accurate, targeted prosecutions. When it comes to analysis of mobile network traces, the solution has to meet some stringent requirements:

▶ Quick and efficient measurements at the alibi location
▶ Data comparison with previously gathered call data records (CDR) from network providers indicating which base station a suspect's mobile phone was connected to at the time of the crime
▶ Capability to provide clear evidence of whether a suspect's mobile phone could have been at the alibi location, in order to present reliable testimony at trial

Rohde & Schwarz solution

R&S®NESTOR cellular network analysis (CNA) software meets these requirements. R&S®NESTOR offers more than conventional mobile network analysis tools. Such tools deployed for network operators or service providers offer only RF measurements and system information message content. While the collected raw data is identical, the key difference is that R&S®NESTOR also provides automated dedicated analysis and a specific focus on law enforcement activities.

With R&S®NESTOR, users spend far less time with system configuration and measurements, and can easily operate the system without a lot of technical knowledge about 2G, 3G, 4G, 5G, handovers and other procedures, which enables them to verify alibis faster.

ROHDE & SCHWARZ

Make ideas real

WHY R&S®NESTOR?

Fast workspace preparation

From areas of interest to analysis parameters and content view, users can easily custom configure their working environment. The overview of which data to analyze, and how the results are displayed can be modified during measurement or postprocessing. Users can also import or manually configure cells of interest based on CDR obtained from network providers.

Easy measurement

A quick overview of the measurement process is provided. This is particularly attractive for non-expert users. The system can start automatically with a predefined environment. This makes it possible for anybody to go to the alibi location, start the system, which takes measurements and gathers evidence automatically for subsequent evaluation by an expert during postprocessing and analysis.

Automated analysis

Automated analysis with dedicated algorithms for each technology can be carried out online during measurement or offline during postprocessing for comprehensive classification of mobile and scanner measurement results. These results yield valuable evidence that can be presented either in a courtroom or to lawyers pre-trial.

Software and analysis

Analysis can be performed onsite during measurement by experts or later in an office environment to gain a full situational picture. The scanners and mobile phones used for analysis give users a quick indication of whether a particular cell of interest can be measured at the location of interest. If a crime scene measurement file is available for the case, R&S®NESTOR also allows users to run the alibi verification algorithm based on that data. This reduces the number of measurements required, saving considerable time during the investigation.

The intuitive software and user-friendly graphical user interface gives users a clear and reliable determination of whether a suspect's mobile phone could have been at the alibi location. This information can be used as evidence, either directly in the courtroom when presenting evidence or for lawyers before the trial.
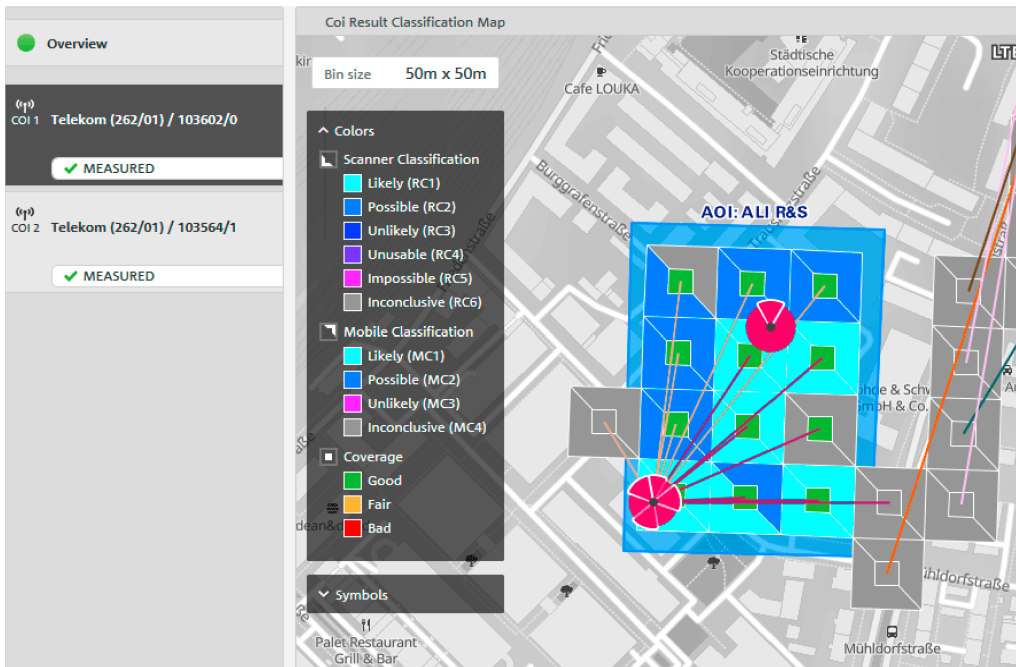
R&S®NESTOR alibi verification results overview