



Training
Services

Introduction to Fixed & Mobile Communications

Training Overview

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Course Code: FA016

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Forensic Analytics
Communications Data Experts

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Introduction to Fixed and Mobile Communications

Introduction

A key component of Digital Forensics today involves analysing the data available from fixed and mobile communications networks. This course lifts the lid on the underlying fundamental principles and technologies underpinning the operation of terrestrial and mobile communications networks.

The course is aimed at Police investigators, RF Surveyors and Police Analysts who are exposed to the data that these networks produce, and which can form a vital part of the forensic digital evidence available to investigators.

The course will plot the history of telecoms and mobile comms and detail how each key component of a terrestrial network interfaces to the next and the will detail the technologies at a sufficient technical level to be accessible to the target audience whilst not omitting any critical information pertinent to investigations.

Forensic Analytics

Forensic Analytics Ltd was formed in 2013, but its principal staff have long experience in the telecoms and forensic industries.

Forensic Analytics' main business area is the development of data processing software tools that automate the most time-consuming aspects of cell site analysis. Our first product was CSAS (the Cell Site Analysis Suite), which provides a range of features designed to process, query, map and present mobile phone call records.

We also make use of our extensive technical backgrounds to provide consultancy, training and competence transfer services to law enforcement and forensic customers.

Forensic Analytics deals with many organisations that are new to cell site analysis. In addition to the training we can provide for users of our software, we are also able to offer training on the wider topics of cell site analysis and telecoms in general.

Our trainers are experienced telecoms engineers with many years of training delivery. Cell site courses are taught (or have input from) experienced expert witnesses, who are able to bring their real-world knowledge of analysis, surveying and report writing to bear and to illustrate their delivery with 'war stories' and anecdotes from court.

Course Overview

Duration: 3 days

Intended audience: all levels of participant

Maximum participants per delivery: 10

Course description: this course provides a semi-technical overview of the history, architecture, and technologies underpinning the operation of a telecom and mobile network. Delivery is split into three days in which one day will be devoted to

fixed communications and principles, and the other two to mobile communications and data principles.

Pre-requisites: none

Course objectives: provide participants with basic details of how networks function so that they may apply these principles to criminal investigations involving the use of communications devices.

Course resources: course manual, exercise handouts

Course content:

- The origin of telecommunications
- The principles of communication
- Analogue and digital technologies
- Circuit switching principles
- Packet switching principles
- Signalling overview
- The Public Switched Telephone Network (PSTN) Architecture
- Call Set Up and Teardown
- International Telecommunications
- Mobile communications history
- Principles of mobile communications
- Mobile network architecture
- Radio principles of a cellular network
- Cells, Sectors, Capacity and Backhaul
- Radio Access Network (RAN)
- Core Network
- 2G, 3G, 4G Architecture
- 2G,3G, 4G Comparison
- Interconnects and Gateways.
- Appreciation of IP
- IP, VOLTE and IMS
- Voice Call Setup and Teardown
- Data Session Setup and Teardown
- Call Detail Records
- Wi-fi Overview
- Wi-fi Principles of Operation
- Wi-fi Logs
- Putting it all together
- Cell Site Analysis Overview
- Case Studies demonstrating how the above material is pertinent to actual UK based investigations

Price & Booking

Pricing

For 'open' deliveries, this course costs £400 per delegate per day (excluding VAT, travel, accommodation, etc) but including lunch each day.

The total cost is therefore £1,200 + VAT.

We offer discounts on these prices for 'closed' courses, delivered at the customer's premises.

The quoted prices include electronic versions of the course material. Printed copies of course material can be provided but there is an extra cost for this, please enquire for pricing.

Accommodation

To be booked by attendees as it is not included in the course fees.

The Premier Inn Letchworth Garden City Hotel, Station Rd, Letchworth is located approximately 0.5 miles from The Pixmore Centre and The Broadway Hotel & Carvery, Broadway, Letchworth is located approximately 1 mile away.

Terms & conditions

Full details of our training Terms & Conditions are available on request.

In general, we will require a PO (Purchase Order) number for the full course fees from each customer before a training event can be confirmed. We may require part or full payment in advance in some circumstances.

Unless otherwise agreed, all intellectual property rights, including copyright, patents and design

related to any training material supplied shall belong to and remain vested in Forensic Analytics (or in the copyright holder identified on any training material supplied by Forensic Analytics).

Course delivery location

This course will be delivered at:

Forensic Analytics Ltd
The Pixmore Centre
Pixmore Avenue
Letchworth SG6 1JG

Closed courses may be delivered at the customer's premises or chosen venue. Open courses may be delivered at other locations depending upon requirements.



Booking & queries

Please contact us at:
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