



Training  
Services

2020 Brochure



Forensic  
Analytics

Communications Data Experts

# Cell Site Analysis Courses

Our cell site courses provide a technical framework for understanding the operation of cellular networks, the capture and meaning of communications billing data, the role of forensic radio surveys and the overall benefit that communications data and cell site analysis can bring to investigations.

## Communications Data Overview for Investigators

Level 1  
Course Code: FA018  
0.5 or 1 day course

Suitable for: researchers investigators, supervisors frontline officers, CPS case workers, barristers, SIOs

Explains the workings of a mobile network, discusses the meaning and relevance of communications data evidence – Call Detail Records (CDRs) – obtained from network operators and also shows the investigative links that can be established between CDRs, handset download data, Automatic Number Plate Recognition (ANPR) captures and other forms of evidence.

## Workshop: Cell Site Analysis

Level 1  
Course Code: FA012  
1 day course

Suitable for: new analysts, students, investigators, SIOs

This workshop is structured around a realistic robbery case and offers the opportunity to gain an understanding of the operation of a mobile network and the investigative benefits of employing cell site analysis in cases, while gaining hands-on experience of cleansing and analysing comms data and other forms of digital evidence

## Overview: Cell Site Analysis

Level 2  
Course Code: FA001  
2 day course

Suitable for: intel analysts communications data analysts, cell site analysts, RFPS engineers, SIOs

Provides a deeper understanding of the functions and operation of mobile networks. Explores the role of Radio Frequency Propagation Surveys (RFPS) in cell site analysis. Offers an overview of cell site report writing and the analytical tools employed to make sense of comms data evidence.

## Advanced: Cell Site Analysis

Level 3  
Course Code: FA002  
3 day course

Suitable for: experienced analysts & RFPS engineers

Builds on the Overview course and provides a deeper understanding of mobile network operation, the content and meaning of CDRs, the investigative benefit of RFPS surveys and the types of survey that can be undertaken. Provides underpinning technical knowledge for staff who may need to give evidence in court.

## Cell Site Overview for Disclosure Teams

Level 2  
Course Code: FA029  
2 day course

Ideal for staff working in the law enforcement liaison or disclosure departments of comms providers, this course provides a background to the network technologies being employed, discusses the interface between network activities and billing data, and enables attendees to understand the value and relevance of the data they are disclosing. It also provides an overview of ways in which the disclosed 'product' is used to aid investigations.

# Radio Frequency Propagation Surveys (RFPS)

Forensic Radio Frequency Propagation Surveys (RFPS) add empirical evidence of the coverage provided by cells used by subject phones in a case. Our RF survey courses range from simple overview sessions up to week-long, City & Guilds accredited programmes, backed up by our best-selling book *Forensic Radio Survey Techniques for Cell Site Analysis* (Joseph Hoy, Wiley, 2015).

## RFPS: RF Survey Overview

Level 1  
Course Code: FA019  
1 day course

Suitable for: new RF survey engineers, SIOs, investigators, researchers, comms data analysts

Explains the basic workings of a mobile network, outlines the various types of survey techniques that are employed and provides an insight into how RFPS evidence can strengthen cases that use comms data.

## RFPS: Entry Level Training

Level 2  
Course Code: FA020  
5 day course

Suitable for: new RFPS engineers

A less technical counter-part to FA014 (right), this course provides a basic grounding in the theory of RFPS before concentrating on the practical aspects of conducting surveys. It can be delivered either as preparation for FA014, allowing entrants to RFPS work to gain experience of the techniques without delving too deeply into the theory, or it can be used as a second week to the 'experienced practitioner' course, giving attendees the opportunity to practice survey techniques and report writing for several different types of scenario.

## RFPS: Experienced Practitioner Training

Level 3  
Course Code: FA014  
5 day course

Suitable for: experienced RFPS engineers

Offers follow-on training for experienced RFPS engineers who have gained experience of undertaking surveys and now wish to get a more technical understanding of this topic. In-depth overviews of radio technologies, cellular systems and the operation of radio cells are provided along with detailed examinations of survey techniques and survey devices. Successful completion of the course provides a City & Guilds qualification in RFPS.

## RFPS: Follow-on Training

One-to-one mentoring  
Course Code: FA023  
1 day sessions

Suitable for: new and experienced RFPS engineers who want to enhance specific skills

A unique opportunity to spend the day with an experienced RFPS surveyor to discuss survey techniques, equipment issues, report writing and other complex topics in a focused one-to-one manner.

**City & Guilds** | **Accredited Programme**

# Communications Data Analysis & Call Detail Record Processing

Call Detail Records (CDRs) are the lifeblood of comms data analysis. Our training courses help analysts and investigators to understand the meaning behind the CDR records so they can piece together the detail of the events described in them and better understand how this data can support their investigations.

## Communications Data Processing

Level 3  
Course Code: FA015  
3 or 4 day course

Suitable for: new comms data analysts

Now accredited by City & Guilds, this course offers an externally recognised qualification in CDR cleansing, processing and analysis. It provides an in- depth exploration of how mobile networks work and how and where call data is captured. Attendees will explore the meaning and relevance of CDR fields and examine the investigative benefits that an understanding of the data can provide. Current CDR formats are examined in depth and exercises that offer hands-on practice of cleansing/parsing that data are undertaken. An optional extra practice day can be added.

## Next Generation Comms Data Analysis

Level 3  
Course Code: FA017  
2 day course

Suitable for: new and experienced comms data analysts

This course examines new and upcoming forms of communication, network types and calling techniques: 4G, 5G, VoLTE, SRVCC, Wifi Calling and VoIP among others. It provides an overview of how these new services and technologies work and looks at the CDR data that they provide. The purpose is to prepare CD analysts for the types of data that will become common in the near future and how to extract evidence from them.

## CDR Processing Overview

Level 1  
Course Code: FA022  
1 day course

Suitable for: new comms data analysts, SPoC/CDIU staff, investigators, SIOs

Offers an overview of the basic operation of comms networks and describes the way that basic services (calls, texts, data sessions) are handled. It then looks at the various CDR types that are generated and explains the meaning and relevance of key data fields. A brief overview of current CDR formats is also provided.

## CDR Processing Follow-on Training

One-to-one mentoring  
Course Code: FA025  
1 day sessions

Suitable for: comms data analysts who want to enhance specific skills

Provides an opportunity to spend the day with an experienced Communications Data Analyst to discuss cleansing and parsing techniques, analytical methods, report writing and court presentation skills.

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## Call Obfuscation Techniques

Course Code: FA036  
Half day course

Suitable for: comms data analysts, SPoC/CDIU staff, investigators, SIOs

A trend that has been emerging in criminal investigations in recent years is the use of various methods to conceal communications. This half day course covers developments in:

- CLI (Calling Line Identity)
- Spoofing
- SIM Card Spoofing.
- IMEI (Handset) Spoofing.
- Use of VOIP services to conceal communications.
- How to identify spoofed/ fake telephone numbers, and opportunities for identification of the true number.
- Encrypted communications.
- Hardened phones: Physical attributes and characteristics of CDRs.

## Interpreting GPRS Billing Workshop

Course Code: FA037  
1 day course

Suitable for: comms data analysts, SPoC/CDIU staff, investigators, SIOs

Mobile data records (known generically as “GPRS” data) are increasingly important to the analyst and investigator. When examined and interpreted with the appropriate care and attention to detail, this information source can be a surprisingly rich source of geographic data and of certain aspects of users’ communications. Over the course of this day’s training, delegates will be shown examples of, and work with sample data from each of the telephone service providers. Detailed explanations are given as to the methods by which phone companies provide data connections, and therefore how the billing records are generated. By the end of the course, you will be able to recognise and make use of a variety of leads and investigative opportunities that routinely appear in the data.

## IP Principles for Analysts and Investigators

Course Code: FA042  
1 day course

Suitable for: comms data analysts, investigators

The aim of this one-day course is to teach delegates what IP is, it’s importance to connectivity across networks and to contextualise with a number of scenarios in which Investigators would get exposed to IP addressing and IP networking. At the end of the course delegates will have a good level of understanding and the confidence to discuss IP in general and the principles of IP operation. In addition, they will be able to apply the IP knowledge they have learned to a variety of Law Enforcement scenarios. Delegates will be able to recognize and understand IP addressing when it appears in CDRs, Wifi Records, Router Logs and IPAR results.

NEW  
for  
2020

# Criminal Intelligence Analysis: Core Skills and Operational Intelligence Analysis Training

The role of the criminal intelligence analyst is essential to effective strategic and operational policing. We have brought the knowledge and skills of several highly experienced intelligence analysts to bear on the creation of a range of new and relevant training courses, designed to assist you in your role, and enhance the analysis you produce, be it for investigative success, or effective strategic management.

## Communications Data Analysis Techniques

Course Code: FA038  
2 day course

Suitable for: comms data analysts

This new course is designed by Intelligence Analysts who have worked at local, national and international levels on criminal investigations into Organised Crime Groups, Kidnaps and Terrorism. The one-day curriculum covers: The Investigatory Powers Act 2016, and requesting comms data. Attribution of telephones. The importance of attributing numbers and devices, and methods of attribution evidence collation. Techniques for analysis of Call Data, including: Common number and cell analysis. Using data to examine the geographical profile of a device, and therefore that of the user, identifying potential home addresses, meeting locations, etc. Co-location to identify “burner” phones and potential meetings. Comparison with surveillance, CCTV, ANPR, handset downloads. Scenario exercise, involving the production of an evidential attribution report and an evidential sequence of events report.

## Statement & Report Writing

Course Code: FA040  
2 day course

Suitable for: intelligence analysts, investigators

The power of a well written internal report can make all the difference to progress on an intelligence operation or an investigation. When progress is made to the point that a prosecution can take place, statements must be drafted with care and attention to detail, to ensure that all relevant aspects of the evidence that you have examined or produced are explained and made clear.

This course covers: Planning a report, and organising of report content. Appropriate use of graphics, diagrams, charts and maps. The rules regarding drafting of an MG11 statement. Drafting an effective statement. Avoiding common mistakes.

## Evidential Mapping

Course Code: FA041  
1 day course

Suitable for: intelligence analysts, investigators

Accurate and clear mapping is essential when using geographical evidence in an investigation or prosecution. This course has been prepared by Intelligence analysts who have prepared printed and digital animated maps to Crown Courts and international courts, for cases involving organised crime, terrorism, murder and other serious crime. Instruction is given in the correct use of GIS software, coordinate systems, use of graphics and symbology. Emphasis is made on the most appropriate use of communications data, ANPR, GPS locations and other time stamped data when it is incorporated into maps. Advice is given on layout, content and arrangements of the elements that go to make a clear and understandable representation of the geographic aspects of the evidence.

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## Courtroom Skills

Course Code: FA032  
1 or 2 day course

Suitable for: intelligence analysts, investigators.

This course brings a new and innovative approach to training Intelligence Analysts and Investigators for appearing at court. Aspects that set it apart from other court skills courses include the emphasis on strong and confident delivery of evidence in chief, and key insights into the motivations and techniques used by defence lawyers. Delivered by experienced defence barristers and lawyers with experience at the UK Bar, the International Criminal Court, and elsewhere around the world.

Instruction is given on court layout, the roles of the parties in the court and the order of play. Advice is given on preparation, how to deal with questions, posture, composure, and various lawyers' techniques. If you take the option of the two day version of the course, the second day includes a visit to a real courtroom, and more in-depth individual advice and guidance.

## Excel for Analysts

Course Code: FA039  
1 day course

Suitable for: comms data analysts

Concatenating text / splitting text, Count and Countif functions, Vlookups, Pivot tables, Conditional formatting, Inserting columns and rows Simple and complex filters. Macros.



## Core Intelligence Analysis Training

Course Codes:  
Stage 1: FA028 (5 days)  
Stage 2: FA033 (5 days)

Stage One explores how intelligence-led policing and the National Intelligence Model (NIM) supports reactive and proactive investigations and staff working in an Intelligence Unit. It follows the Intelligence Professionalisation Programme (IPP) standards and focuses on the role of the Intelligence Analyst.

Stage 2 covers the range of structured analytical techniques, and uses an embedded scenario to challenge the Analyst and give them every opportunity to apply the learning in a practical way.

**City & Guilds** | **Accredited Programme**

# CSAS Training

Alongside the free introductory training provided for CSAS users we also offer a range of advanced courses, with a 50% discount, that can help users explore more features of CSAS than can be covered in initial sessions and further develop their knowledge.

## CSAS Bootcamp

Level 2  
Course Code: FA004  
1 day course

Suitable for: new CSAS users

Provides an in-depth overview of CSAS Desktop and introduces all modules and features. Users have plenty of opportunities to get hands-on practice with CSAS, using anonymised but real data to gain a thorough understanding of the key operations.

## CSAS Parsing & Data Handling

Level 2  
Course Code: FA006  
1 day course

Suitable for: new and experienced CSAS users

This course provides an opportunity to gain an understanding of how CSAS processes source comms data. The course is country-specific and provides in-depth details of how the most common CDR formats from the local operators are cleansed or parsed, what the parsing rules are and which are optional. This course is designed to provide users with the details they need to be able to answer questions about their use of CSAS.

## CSAS Advanced User Training

Level 3  
Course Code: FA005  
3 day course

Suitable for: experienced CSAS users

Redeveloped for 2019, this training course gives experienced CSAS users the opportunity to gain an understanding of the deeper functionality of the system - from improving their understanding of the parsing/cleansing process, to making better use of CSAS Mapping and Analytics, through to being able to recommend the best configurations for CSAS to their IT support team.

## CSAS Follow-on Training

One-to-one mentoring  
Course Code: FA026  
1 day sessions

Suitable for: CSAS users who want to enhance specific skills

Provides an opportunity to spend a day with an experienced CSAS trainer to discuss parsing, mapping, analytics, report writing and other complex topics in a focused one-to-one manner.

## CSAS for Investigators Course Code: FA035 2 day course



Suitable for: investigators

Designed for operational and specialist investigators, this two day course concentrates on bringing investigators up to speed on efficient use of CSAS to ingest data and obtain investigative leads and analysis. Additional features include an overview of legislative and procedural matters relating to the obtaining of comms data, and practical scenario based examples

# Telecoms Training

Our background is in telecoms engineering and we understand the great benefits that a good grounding in basic network technologies can provide for analysts, RFPS engineers and other forensic disciplines.

## Training Partners

**Wray Castle Ltd** are world leaders in technical telecoms training, offering courses on topics from 2G to 5G and everything in-between. They provide our onward progression path for those who wish to gain more in-depth technical knowledge of telecoms and Internet topics.

**Blue Lights Digital Ltd** are experts in open source intelligence and digital investigation training. Their partnerships with universities and other organisations allow them to offer widely-recognised qualifications and unbeatable domain knowledge.

**Sharopa Training** are specialist trainers in intelligence research, analysis and IBM i2 Analyst's Notebook. Their clients include law enforcement, government agencies and the private sector.

## Introduction to Telecommunications

Level 3  
Course Code: FA016  
3 day course

Suitable for: all

This course presents a detailed examination of modern communications networks, looking at the history, development and modern implementations of landline, cellular and data networks. It provides a solid understanding of the main concepts of telecoms (circuit and packet switching, transmission and switching) and serves to underpin investigative knowledge with a bedrock of technical understanding.

## Introduction to Mobile Networks

Level 3  
Course Code: FA021  
2 day course

Suitable for: all

This course concentrates on the cellular/mobile network aspects of the Intro to Telecoms training and focuses on technical knowledge that is important to analysts and investigators who work with evidence provided from cellular networks.

## 5G Overview

Level 2  
Course Code: FA030  
1 day course



This course provides an overview of 5G networks in comparison to existing 2/3/4G networks and offers a guide to the likely effects on comms data analysis, cell site analysis and RFPS surveying that the adoption of 5G will bring. We examine the likely forensic impact of 5G in the near and medium terms to allow participants to assess the effect this will have on their ability to investigate and analyse cases that include 5G call data.

# Course List

Title	Code	Length
<b>Cell Site Analysis Courses</b>		
Cell Site Analysis Overview	FA001	2 days
Advanced Cell Site Analysis	FA002	3 days
Cell Site Analysis Workshop	FA012	1 day
Communications Data Overview for Investigators	FA018	0.5 or 1 day
Cell Site Overview for Disclosure Teams	FA029	2 days
<b>Radio Frequency Propagation Surveys (RFPS)</b>		
RFPS: RF Survey Overview	FA019	1 day
RFPS: Entry Level Training	FA020	5 days
RFPS: Experienced Practitioner Training	FA014	5 days
RFPS: Follow-on Training (One-to-One)	FA023	1 day
RFPS: Qualification Sessions	FA024	1 day
<b>Communications Data Analysis &amp; Call Detail Record Processing</b>		
CDR Processing and Interpretation	FA015	3 days
Next Generation Comms Data Analysis	FA017	2 days
CDR Processing Overview	FA022	1 day
CDR Processing: One-to-one mentoring sessions	FA025	1 day
Call Obfuscation Techniques	NEW	0.5 days
Interpreting GPRS Billing Workshop	NEW	1 day
Interpreting IP Events	NEW	1 day
<b>Criminal Intelligence Analysis Training</b>		
Core Intelligence Analysis Training - Stage 1	FA028	5 days
Core Intelligence Analysis Training - Stage 2	NEW	5 days
Communications Data Analysis Techniques	NEW	2 days
Excel for Analysts	NEW	1 day
Statement & Report Writing	NEW	2 days
Evidential Mapping	NEW	1 day
Courtroom Skills	NEW	1 or 2 days
<b>CSAS Training</b>		
CSAS Bootcamp	FA004	1 day
CSAS Advanced User Training	FA005	3 days
CSAS Parsing & Data Handling	FA006	1 day
CSAS: Follow-on Training (One-to-One)	FA026	1 day
CSAS for Investigators	NEW	2 days
<b>Telecoms Training</b>		
Introduction to Telecommunications	FA016	3 days
Introduction to Mobile Networks	FA021	2 days
5G Overview	NEW	1 day

### Booking Information

**UK Locations:** courses are delivered at our offices in Letchworth, Hertfordshire, at Hitchin Priory, Hitchin, Hertfordshire or in Liverpool.

Closed courses may be delivered at a venue provided by the customer.

**Overseas Locations:** courses will generally be delivered at a venue provided by the customer.

### Enquiries & bookings

+44 800 158 3830

[training@forensicanalytics.co.uk](mailto:training@forensicanalytics.co.uk)

[www.forensicanalytics.co.uk](http://www.forensicanalytics.co.uk)

### Pricing

**CSAS courses:** £200+VAT per person per day

**Other open courses:** £425+VAT per person per day, with the exception of course FA014 priced at £445+VAT per person per day. Prices may vary, and discounts are offered if multiple delegates sign up - please contact us for a quote.

**Closed courses:** £2,250+VAT per day.

Discounts are offered for courses delivered at the customer's premises. Expenses may be added for overseas deliveries.

We make electronic (pdf) versions of training material available on each course, but recognise that some people prefer a printed copy. To keep our prices down overall we provide printed manuals as an optional extra charged at cost price - please ask when booking your course.



# Forensic Analytics

Communications Data Experts



CSAS



CDAN  
Nexus



Integrated  
Intelligence



Cell Site  
Analysis



Training  
Services

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