

Temporary SFR Guidance Content for Cell Site Analysis for Geolocation

The use of the SFR process in cell site analysis for geolocation purposes, was agreed by the cell site expert working group in 2024. The SFR process can be applied when giving an opinion or information to support the formulation of an opinion, as to the geolocation of a device. This is based on cell site analysis and including; location based surveys, route based surveys and colocation/non-colocation surveys and analysis. It is not intended that the SFR process is used for non-evidential analysis such as the type deployed in wanted or missing person enquiries.

For all geolocation analysis types, the activity should only be undertaken by individuals who have received the appropriate training and can demonstrate competence to provide the analysis required.

It is highly recommended that Radio Frequency Propagation Surveys (RFPS) should be used to assist in the formulation of opinions expressed in the MG22B and C documentation. Where this is not possible due to time elapsed, cells being decommissioned, spectrum being re-farmed etcetera, then this should be clearly documented to allow full assessment of the strength of opinion made.

Prior to adoption it is important that preparatory steps are made internally and with partners in the Criminal Justice System to aid successful adoption of Short Forensic Reporting in this discipline. A flow process chart has been created for this purpose and can be found [here](#).

Analysis of network communication data. Forensic information report – MG22A

Cell site analysis for geolocation purposes (forensic science activity DIG 200) is currently classified as being opinion-based evidence only. An MG22A is not suitable to provide opinion-based evidence, however competent and approved individuals can inform and investigation using an MG22A for factual purposes under forensic science activity DIG101 (analysis of communications network data). DIG101 encapsulates some of the preparatory work for evaluative analysis, under which cell site analysis for geolocation (DIG-200) is practiced. The scope under which this would apply and for which an MG22A can be utilised would be to provide an investigation with cell IDs which provide service to a particular location. The details which will be provided include:

- Address or location surveyed
- Type of equipment used
- Radius surveyed
- Cells surveyed as providing serving coverage to that location, including technology, MNO and Cell ID.

An MG22A can also be used to furnish the investigation with the measured coverage area (footprint) of a cell site.

No opinion or analysis will be provided on this document. It will be used as a standardised reporting response to identifying what cells provide service to a location or scene of interest, or the extent of coverage of a particular cell site. If further scenes become apparent throughout an investigation then an interim MG22A can be provided and subsequent MG22A reports can be provided. Even though the content of the MG22A report should contain no opinion or analysis, it should be peer reviewed or stated otherwise in the report. An MG22A will not be placed into evidence, but should provide investigation teams with the basis on which to formulate investigative hypothesis.

MG22A reports containing this can be used and shared outside of the reporting organisation. Should this be the case then the case details should be redacted as necessary.

Cell Site analysis for geolocation purposes. Forensic result report – MG22B (SFR1)

The MG22B is only produced when the investigative analytical work has been completed. It is to be used to report on all aspects of forensic science activity DIG200 (Cell Site Analysis for geolocation purposes). MG22Bs for under this discipline should only be utilised by individuals who have received the required training and be able to demonstrate competence to provide this level of analysis. The purpose of the MG22B is to provide the investigation and the court a summary of findings in relation to the tasking identified that the Prosecution may seek to rely on at trial. It is highly recommended that opinions formulated in the MG22B are done so with the assistance of Radio Frequency Propagation Surveys (RFPS). This also gives the Criminal Justice System a greater level of surety on the validation of opinions expressed. Where this is not possible to achieve then the reasons why RFPS have not been completed must be documented to allow clear and transparent assessment of the opinion presented.

The information below outlines how the MG22B can be utilised to provide opinions on the following themes – a) the likely location of a device using the cellular network b) attribution of a device to an individual and c) possible location or non-colocation of devices. Examples of propositions would include:

- Is the call data of a type to be expected if phone A:
Was in an area including the home address of the suspect, moved to an area including the offence location during the period of criminality and then returned to an area including the home address of the suspect? (Prosecution proposition)
Was in an area including the home address of the suspect and remained there throughout the period of criminality” (Defence proposition).
- Is the call data of a type to be expected if Phone A:
Was in use by the suspect.
Is in conflict with the position that it was in use by the suspect.
- Is the call data of a type to be expected if phone A and B:
Were collocating at a particular location at a particular time.
In conflict with the position that the devices were collocating in a particular location at a particular time.

It is important that practitioners giving an evaluative opinion should interpret the evidence in light of the propositions set out by all parties. As a result, any summary report should be balanced and consider one or more alternative propositions. In the absence of a stated or obvious defence position (eg. Home address), a null proposition (e.g whether there is data in conflict with the prosecution proposition) may be adopted.

The delivery date for the MG22B is agreed between the individual compiling the report and the OIC. This is subject to local agreements and policies.

Cell Site analysis for geolocation purposes. Expert response to issues identified – MG22C (SFR2)

The MG22C would only be used by an expert witness to address specific issues addressed by defence or other expert following their review of the MG22B. Any challenge should be made in writing and to the expert or unit which compiled the MG22B

The expert completing the MG22C can be expected to be called to attend court to give evidence on the issues contested. As a result the author must ensure they have met their obligations as an expert under CrimPR 19.4. Any report should be accompanied with the relevant annex documents.

Cell Site analysis for geolocation purposes. Factual Response Statement – MG22D (SFR2).

It is not anticipated that MG22Ds will be widely used in this discipline. However an MG22D can be used, when challenged to provide factual information. This could include but is not exhaustive of information relating to survey equipment and data processing version numbers, dates when surveys were conducted for example. They can also be used to provide statements of continuity.