

Transforming Forensics/Forensic Capability Network Cell Site Analysis Seminar

14 October 2020

Question and Answer Panel Session Follow-up

Panel:

- Dr Gillian Tully CBE, Forensic Science Regulator (GT)
- Matt Tart, Principal Expert, CCL Forensics (MT)
- Neil Matthews, Technical Support Manager, East Midlands Special Operations Unit (NM)
- Jim Arris, East Midlands Special Operations Unit (JA)
- John Beckwith, Digital Forensic Science Capability Lead, TF (JB)
- Kevin Sullivan, Standards and Accreditation Subject Matter Expert, TF (KS)
- Paula Mulroy, Workforce Strategy Lead, FCN (PM)

Question	Response
How is the digital experts group recruited and are its findings published?	Answered during session
An issue I keep encountering is redacted data or data that has been manipulated. I would like to know panels thoughts on supplying unredacted data to the defence expert.	Answered during session
When presented only with GPRS data, when can we be more precise with when a device is 'At' a cell. Would you exclude potential follow on records?	Answered during session
An issue I keep encountering is redacted data or data that has been manipulated. I would like to know panels thoughts on supplying unredacted data to the defence expert.	Answered during session

<p>An issue I keep encountering is redacted data or data that has been manipulated. I would like to know panels thoughts on supplying unredacted data to the defence expert.</p>	<p>Answered during session</p>
<p>Is there a road map for the regulation of Cell Site Evidence in the same way as ISO for digital forensics?</p>	<p>Answered during session</p>
<p>We will not know what is in issue with the defence until sometimes a week before the trial. Defence counsel are not there to assist us. Is this not just feeding into more challenges?</p>	<p>Answered during session</p>
<p>When are the findings of the Comms Data Group validation going to be released? Is the scope to compare what occurred on a phone and what the CDR record shows could be correlated?</p>	<p>Answered during session</p>
<p>Training is a big issue at the moment. In my home force, and in most others, training for intelligence analysts has been significantly cut due to funding pressures. In my opinion, there should be a national guidance to dictate training essentials for analysts that undertake cell site analysis work and thereafter regular CPD (such as the Next Generation Comms course that SPOCs get each year). Do you know if there is any movement in that direction?</p>	<p>Answered during session</p>
<p>With regards to impartiality by considering additional evidence; will cell-site experts be able to request accurate ANPR camera locations? I ask since the use of unspecified locations for ANPR cameras (i.e. ANPR activation in Birmingham) could potentially change an examiners conclusion once an accurate location is gathered (i.e. ANPR activation on M6, Junction 6 travelling east).</p>	<p>NM: To ensure cell site experts are able to comment they require all of the available facts before them, this would include any other information such as locations of ANPR, this is vital if they are to be used as part of any attribution. An expert in any discipline can only comment fully if all of the factors are available for consideration, I would suggest this question highlights the importance of the evidence gathering process and the duties of the prosecution for disclosure under CPIA.</p>

<p>what is the panel view of where evidencing cell site data should sit in police forces? e.g. SPoC units, and separate department. In many forces applicants are evidencing their own data. Whilst, they have access to mapping tools systems etc. it does mean they understand the data.</p>	<p>GT: I am agnostic as to which department anyone producing Cell Site evidence sits in, but the critical issue is that whoever is producing evidence needs to have the relevant competence to do so. There will be people reporting factually about specific actions they have taken, e.g. with call data records. Others will be giving expert evidence and as such, they must be giving independent evidence to the court, in line with all of the legal obligations that exist for experts. It is very easy in cell site analysis for people to accidentally stray from fact to opinion: as soon as there is an uncertainty in the data (which applies widely in this field) then you are into making inferences and hence expert evidence. The danger in having too many different people in different departments reporting cell site evidence to the courts is that the expertise may be spread too thinly. I come back to competence - is everyone who is giving the evidence competent to do so?</p>
	<p>MT: Agree</p>
	<p>JA: I agree with the comments, however I think that the only way in policing for competence to be shown and maintained if for this to be a full-time dedicated commitment as someone's role. As pointed out, having it spread across too many people is not ideal, let alone different departments and management structures with different attitudes, budgets, and objectives. If cell site is going towards a full-on forensic practice, then I would see it sit alongside either a force's ISO wet forensic teams or ISO digital labs. Otherwise you will have departments that have no concept of ISO standards trying to implement them.</p>

Dr Tully - What might your opinion be of the potential for some risk to a prosecution case where cellsite/RF evidence is delivered by a witness of fact, where that evidence is then subsequently challenged by a potentially more qualified defence expert witness ?
I do understand that the witness of fact may have done everything right and presented their evidence very well, but it's possible a more overtly qualified defence expert could cast what might amount to unfair judgement on elements of the fact evidence that they may get away with because they are a more professionally qualified expert ?
I know there's no right answer but interested in your observations, thank you

GT: If the Cell Site evidence is disputed in a case then it seems likely an aspect of the finding is open to interpretation then it is/was probably not safe to leave it to the trier of fact to interpret it and/or make inferences about it. Good early case management is very important to identify what the issues are in a case. Early case management is about identifying live issues and it may prompt further technical tests to be performed, but it is more likely that the interpretation of the results would be challenged than the factual elements of the case - that means an expert would be needed. The expert instructed by the prosecution could equally be from policing or the private sector, it is important though that they are fully aware of their obligations when acting as an expert. In the end, it comes down to what is being disputed and ensuring that whoever is giving the evidence is competent to respond to the challenge.

ANPR data is often used alongside call data again this is being supplied redacted and sometimes without location at all. How is an expert expected to comment on this?

MT: It will depend on circumstance. Some forces may give a latitude/longitude for an ANPR, in which case this is a precise location and not an issue. Some forces may give a latitude/longitude for an ANPR but request that it be used in analysis but not immediately disclosed; Disclosure can be addressed at a pre-court hearing, but the analysis can reflect a precise location. Some forces may provide an area for the ANPR with varying degrees of precision. For example, the description might be something like "M6 northbound between junction 5 and junction 6". The call data can still be considered under these circumstances as to whether it might be expected if the phone were moving through the area described for the ANPR. For example, if the call events before the ANPR activation are handled by cells serving further south on the M6 and those after the ANPR sighting further north, the ANPR location is still useful information in an assessment even though it is less precise than latitude/longitude. Likewise, if there is data in conflict with the phone being in this area at the time of the ANPR activation. The language used to express opinion under these circumstances must be explicit in terms of the precision of the finding being limited by that of the received data.

Issues may arise when there is a call event very close in time to the activation of the ANPR, as the location of the ANPR relative to the service area of the cell becomes much more relevant. Under these circumstances more specific locations may be requested and if this is not forthcoming the practitioner should declare the constraint to the data considered so that the court is aware of the limitation of any opinion given. This may result in an explicit statement of "assessment of whether the call data might be expected or is in conflict is not possible given the lack of precision of the information received"

If an ANPR sighting is supplied without any location information at all, this would appear to render it meaningless and it should be declared as such

<p>Can the panel suggest alternative phrases to Consistent and Vicinity that ARE acceptable to courts and that address the issues raised by Dr Tully</p>	<p>GT: It is not the term 'vicinity' in itself that is problematic, so much as its use without definition. If you define the 'vicinity' in a particular case, e.g. within 100m or within 1 mile, then there is no issue. Undefined, it could mean either and how could the court know which? In relation to 'consistent with', there is no direct replacement word: we need to be approaching the interpretation in a different way. Rather than setting out one proposition and trying to determine whether or not the results are 'consistent with' that proposition, you set out two alternative, mutually exclusive propositions. You can then evaluate how probable your findings are under each proposition. This is the subject of an entire training course in itself, so it's not possible to go into it in great detail here.</p> <p>MT: agree</p>
<p>HI, If I attribute a phone to person X, is that 'opinion' or 'evidence'? Obviously, I will list evidence to support the attribution, but the attribution itself is surely opinion?</p>	<p>MT: The attribution of a phone is a proposition (which could also be termed an allegation). It may be accepted or refuted by the suspect.</p> <p>Consideration as to whether the data would be expected given that proposition is an opinion. If the data presented can be readily interpreted by a juror without deeper expertise being required (e.g. the contract for the phone is in the suspect's name, or they have given the number to a third party as theirs etc.) then this information may be relayed to the jury so they may come to a view. The practitioner cannot provide greater insight than the jury in consideration of any of the information,</p> <p>If the data presented cannot be readily interpreted by a juror without deeper expertise being required (e.g. cellsite analysis), then the concerns raised in R v Calland would appear to apply</p>

<p>What validation has taken place around RF equipment? Is there a view on whether Crowd Sourced data, Scanner or Sim based survey data is preferred?</p>	<p>MT: Each organisation providing cell site analysis is required to perform validation under the FSR codes, and to provide an indication of the accuracy, precision and reliability of methods is a requirement under CrimPD. This validation is not limited to the equipment, but also the manner in which it is used (collectively termed “the method”)</p> <p>I cannot comment on what other practitioners/ organisations have done, but at the Forensic Science Service full validation for the methods that were used took place including but not restricted to repeatability and blind trials against network generated call data. Aspects of this validation concerning the GSM network were published in 2012</p> <p>“Historic Cell Site Analysis – Overview of principles and Survey Methodologies”. M Tart, I Brodie, N Gleed & J Matthews, Digit. Investig. (2012) 185-193. https://doi.org/10.1016/j.diin.2011.10.002.</p> <p>At CCL validation has taken place, is complete, and is documented in anticipation for audit by UKAS. Aspects of this validation have also been submitted as academic papers so that they can be used by the wider community. These papers cover GSM, UMTS and LTE methods and are currently in peer review. While these papers may aid the community, local verification of methods will still be required for compliance with the codes</p> <p>JA: EMSOU are part of the ISO pilot in terms of LEA stance. Any progress we make on this will of course be shared within LEA for others to use to assist their own processes. There is hope that through the FCN and TF that there will be some amount of coordination between EMSOU, FCN, TF and CoP so that other forces can validate in the same way - however it can't be done for them.</p>
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<p>Cases where no expert is part of the case is there a risk that the result of the case could be unsafe?</p>	<p>GT: It very much depends on what the evidence was, what the issues in the case were and whether any should have been addressed by an expert. If there is a factual presentation of, say, call data records with very clear boundaries around what that analysis can and can't do, and if that evidence was not disputed, then it would be very unlikely that an expert would be needed or that there is any risk to the outcome of a case. If the finding is open to interpretation, then it is/was probably not safe to leave it to the trier of fact to interpret it and/or make inferences about it. If evidence was presented as 'factual' but actually wandered into inference (and hence opinion) without clearly setting out the limitations of that opinion and without complying with all of the provisions in part 19 of the Criminal Procedure Rules, and if the evidence was disputed, then there may be a risk in that case.</p>
<p>What kind of language should an Analyst use when presenting azimuth/centroid/radii data?</p>	<p>MT: The azimuth/centroid and radii data are network supplied information but is being used to inform opinion on the service area of the cell under consideration. As such, in my view it should be declared as received information, and then any opinions resulting from consideration of it - in the context of the questions considered and along with other information such as mast height, terrain, survey data etc. - should be overtly declared as opinion with limitations of it expressed.</p>
<p>Not a question more an observation. For smaller forces, there might just be one or two trained to undertake RF surveying. Invariably it won't be their primary role, there won't be a dedicated Unit. The idea then that we can put in place all the various control mechanisms, the validation methods, the prospect (likelihood) of achieving ISO accreditation...is fantasy. Add to this the ever-increasing costs of training/upgrading equipment, I'm afraid that unless we have some sort of Regional solution (similar to CCDC) we are going to have to revert to outsourcing to Forensic companies as before. And in which case, it'll only be used for more serious cases and other</p>	<p>GT: A comment in return: if we are going to do forensic science, it needs to be done right. It is not fair on people who have limited training or ongoing CPD to be able to keep up their competence with little or no support, to expect that they will always know where the limitations of what they should do lie. If a force cannot justify the investment itself, it does sound like a regional approach would be more sensible.</p>

<p>perhaps more routine investigations will not be supported. Just like 5 years ago</p>	
<p>We are rarely going to be able to agree facts with defence teams on SOC and/ or MC cases as this requires the authority of the defendants themselves who are facing the probability of substantial custody.</p>	<p>GT: There are clear rules about case management in the Criminal Procedure Rules. We need to use those rules.</p>
<p>There is cell site evidence being delivered in courts every day by Police analysts and RFPS technicians which has not been checked or peer reviewed. Should this be happening?</p>	<p>GT: No. JB: Even the most basic forms of evidence should be checked for accuracy and understanding. There is much good practice that forces can learn from. Much of which has been shared today to support you all to introduce and develop standards where relevant. As a minimum we would suggest you talk to your forensic team and quality manager to support that planning and implementation.</p>
<p>In Derbyshire all of the assessments we have had have been successful but have spent in excess of 250k over the last 3 years on accreditation</p>	<p>GT: It is great that you have been successful. I don't know what your total budget is for forensic services, but £250k does not sound immediately like it would be a large proportion of that. Ultimately, the accreditation part is about providing assurance that an organisation is on top of its own quality. There is ample evidence that without this external review, compliance with standards is not achieved. It's about doing it right.</p>
<p>When presented only with GPRS data, when can we be more precise with when a device is 'At' a cell. Would you exclude potential follow on records?</p>	<p>JA: In short there are times you can be more specific, but it isn't overly simple. It isn't really something that can just be sent out as bullet points, you need to understand GPRS data in detail to then be competent to provide it as evidence. There is a course specifically aimed at providing the knowledge for people to answer this question. The course I am aware of is via Forensic Analytics who can be contacted here enquiries@forensicanalytics.co.uk. - other courses/providers may be out there. Forensic Analytics also host free webinars where they talk through GPRS data and how it can be used. Interested parties will need to contact FA and see what is on offer or what FA might provide for free. Clearly course material etc. cannot be sent</p>

	<p>out without their permission. As with other questions/answers it comes back to competence to be able to talk about this topic.</p>
	<p>MT: This is a 2-day course, there's no quick answer to it in my view</p>
<p>What are the views on using SFR for cell site evidence?</p>	<p>MT: The SFR is a summary of the prosecution findings. It should highlight analyses/ findings that are likely to be contested at an early stage. If the SFR is being used in this way - to understand what is accepted and elicit a defence proposition early or find if the location of the suspect is contested, it may be of great use. If the SFR is used instead of a full analysis and is served late, it may merely add unnecessary risk</p> <p>JA: I think SFRs really have a place for cell site work - especially if/when ISO is in place and reports are written by experts. However, it requires proper discussion with the national SFR board. This did begin a little over a year ago as Darren Fletcher (Notts Police) took it on as a task. There was a group formed in the East Midlands including some private firms as a trial, but it hasn't met for some time. I would be keen to see this group going again and making contact with the national SFR board and CPS contacts to make sure it would be implemented fully.</p>
<p>LEA produce cell site via different teams. Typically, analysts and the RF Techs. How does Matt's model where evidence goes via "experts" allow for the volume of work to be maintained?</p>	<p>JB: Each force / collaboration entity should consider quality in the context of their operating model and the requirements of the FSR Codes of Practice & Conduct (Codes). In that consideration the methods utilised need to be risk assessed from a procedure, technique, environment, and competence perspective. Volumes must not compromise those quality considerations. Where evaluative evidence forms part of any method those involved must meet the requirements of Criminal Procedure Rules and Criminal Practice Direction. Ultimately these methods must be underpinned by science and the FSR Codes are there to clarify both the requirement and importantly assist you in achieving those standards.</p>

<p>Who can be an "expert" from LEA? Is this just RF techs or can it also be trained analysts?</p>	<p>GT: There is no barrier to police staff being expert witnesses. It is about defining what the role is and ensuring the person has the competence to do their job, whether that is restricted to fact or includes expert evidence. Experts are subject to a wide range of legal obligations and so the competence required is wide than purely a technical competence. Ultimately, it is for the court to make a final determination on whether a witness is an expert or not. But someone who has not been fully trained and competent should be put forward by their organisation as an expert.</p>
<p>Is this saying that certain staff/teams need to stop producing cell site evidence?</p>	<p>KS: Answer to Q11 explains what is required of staff/teams who are producing cell site evidence</p> <p>JB: As above, it is for each force of provider to determine their operating models in light of the CJS and FSR requirements.</p>
<p>Whilst agreeing with the sentiment of the panel regarding involving the Defence Bar, we work in an adversarial system. From my own experience defence teams, never mind defendants themselves generally agree facts until the first days of trial, if at all.</p>	<p>GT: We need to keep pushing for all parties to comply with the case management procedures in the Criminal Procedure Rules</p> <p>JB: SFR is a real enabler here and we should continue to explore opportunities to improve early case management. Criminal Procedure Rules apply to all and should be enforced by the Judiciary.</p> <p>Many practitioners have expressed similar concerns at the outset and experiences show that where SFR is used properly and becomes well embedded those issues are significantly reduced.</p>

<p>Some forces are giving cell-site analysis software to ALL detectives. How will this be managed nationally to ensure the quality of intelligence and evidence being produced?</p>	<p>JB, MT: FCN Quality has a key role in supporting minimising duplication and effort in achieving and maintaining standards in Forensic Science.</p> <p>Ultimately the FSR will be given statutory powers and where there is evidence of significant risks of forensic quality failures they will act, whoever the provider is. The FSR already seeks to address any concerns that are identified. As you will see from today's input, the FSR is keen to advise and support all those seeking to implement standards and that approach is assisting many to develop and improve their forensic services.</p> <p>Ideally all forensic science practitioners in cell-site will form part of that FCN community and work together to ensure improvements, standardisation where needed and the relevant accreditation is achieved.</p>
	<p>JA: JA: This is a similar issue where forces have given hundreds of officers/staff access to phone downloading software. I would think validation/competence testing is very difficult for that many staff.</p> <p>Use of the software for an investigator to aid their thinking by cleaning up complicated data they might not otherwise understand or get right can only be a benefit, in part. It becomes an issue when it enters the evidence chain and officers/staff might try to "do it themselves". I do think having software is better than nothing where considerations by an investigator may be completely wrong. However there needs to be clear guidance at force level along with guidance to the CPS to highlight when evidence has been submitted from someone that perhaps should not have completed that work.</p>

<p>Is a universal style of CDR still being created? Furthermore, are networks informed on cell-site analysis and is work being done in improving the validity and usefulness of their data (i.e. DDR style data for other networks)</p>	<p>MT: In short, No. I believe that the Home Office National Communications Data Service is working to standardise CDRs. Please note that this is not the same as standardisation of CDR formats between each network</p> <p>To clarify the question:</p> <p>Are networks informed on cell-site analysis? Yes. They are aware that the data they provide is used for forensic purposes, and there is an interface between the networks and the NPCC concerning how that data is used.</p> <p>Is work being done in improving the validity and usefulness of their data? Not by the networks. These are records generated by them to support their business that are then requested via appropriate legal authority as artefacts that may provide greater insight during an investigation. DDRs are derived from a generically different type of business data, and these are also now also analysed, but the records weren't "designed" by the networks to be used in an investigation or at court, they were intended for other purposes. It is for practitioners to understand how this data might be used and the uncertainty within it</p> <p>Assessing the validity of inferences drawn from such records is required under CrimPD, and methods used to analyse them must be validated.</p> <p>There has been difficulty accessing CDRs for validation purposes, and this is being addressed by the FSR; a pilot trial including network generated CDRs is now underway This pilot study does not, yet, include DDR data which has not been made available even when explicitly asked for during other validation exercises</p>
<p>Will anyone be talking to the CPS so they can challenge cell site evidence submitted outside of the scope what is being discussed here. Essentially non-technical staff trying to by-pass process?</p>	<p>GT: Yes - I have raised with CPS</p> <p>JA: JA: I think this is important as even today I have heard tails of cell site work having been done by untrained staff.</p>

<p>A follow on from a previous question, If / When what the Regulator obtains Statutory Powers what will these enable the Regulator to do / not do?</p>	<p>GT: Enforcement will always be a last resort, but if the current Bill were to be successful in its passage through Parliament, the Regulator could issue a compliance notice, if there was a risk to the CJS. At its highest level, this could stop a person/organisation from performing forensic science until they met any specified conditions. The Bill sets out a more formal sanction route that the Regulator currently has. However, it is worth noting that irrespective of the passage of the Bill, currently any adverse finding by the Regulator about a witness' competence or standards in previous cases is something that might reasonably be considered capable of undermining future cases and therefore requires disclosing.</p>
<p>Is there any way that present potential forensic science students can get internships with any police force to gain pragmatic skills??</p>	<p>PM: some forces currently have relationship with their local universities and facilitate work placements. One of the activities planned under the FCN Workforce Strategy will be to structure and facilitate work placements into industry across the country.</p>
<p>Prior to ISO coming in to play, should we all be rigidly following the published cell site guidance? It seems that this is often not actually put in to practice?</p>	<p>GT: Yes please</p>
	<p>JA: I agree and again I think this important. However, I am not sure that the majority of those practicing cell site are even aware this exists, let alone are following it.</p>
	<p>KS: Ideally, yes: all should be complying with the guidance which was published in 2016. Those that are not yet compliant should be actively working towards achieving this, though a deadline for ISO accreditation has not yet been decided upon by the FSR</p>
<p>I am a Police Officer Trained as an RF Surveyor since March 2014. I have completed countless surveys and presented evidence at court on numerous occasions. my training and equipment have been provided by Home Office and College of Policing. All that said I know I am not regarded as an 'expert'. WHY? If I left the Force tomorrow and joined a private company I would be regarded as such...seems unfair...?</p>	<p>GT: There is no barrier to police staff being expert witnesses. It is about defining what the role is and ensuring the person has the competence to do their job, whether that is restricted to fact or includes expert evidence. Experts are subject to a wide range of legal obligations and so the competence required is wide than purely a technical competence. Ultimately, it is for the court to make a final determination on whether a witness is an expert or not. But someone who has not been fully trained and competent should be put forward by their organisation as an expert.</p>
	<p>PM: There is however a discussion to be had to ensure that any professional profiles and training reflects the requirements of the role</p>