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Certification, registration and assessment of digital forensic experts: The UK experience

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ABSTRACT

The article provides a history and review of the various attempts within the UK at assessing, certifying and registering expert witnesses including those who specialise in digital evidence. It analyses the various actors and stakeholders involved in the process and the different needs of law enforcement employers, prosecutors, defence lawyers and judges. There is also an examination of the economics of assessment: the more rigorous the testing the greater the cost – which is probably going to be borne by the applicant and may act as a deterrent to taking on forensic work. The main conclusion is that designers of assessment schemes need to be clear about their aims, and to consider carefully whether in some circumstances these can be achieved by better court procedural rules and vetting schemes based on lawyers acting as referees.

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English law relating to the calling of expert evidence by parties to litigation dates back at least to 1782 and the case of *Folkes v. Chadd*.¹ The use of experts called by the court may go back as far as 1345.² Forensic science was being deployed in the UK in 1784-physical matching in a murder case. The UK Forensic Science Service, shortly to be closed under government proposals, dates back to 1929.³ The UK Forensic Science Society was founded in 1959.⁴ A dedicated Computer Crime Unit has existed since 1985 and UK computer forensic products started to appear in the late 1980s. The first *Good Practise Guide for Computer-based Evidence* from the Association of Chief Police Officers (ACPO) came out in 1998.

Over the years there has been no shortage of initiatives to control, regulate, certify or accredit expertise as used in the courts and some of the more recent have included the issues of digital evidence. However, while there has been movement

on the fronts of law reform and litigation procedure, the route to accreditation/certification has stalled.

There are a number of reasons for this and there may be lessons here for those in other jurisdictions who wish to set up their own schemes. Towards the end of this paper I will be suggesting that too often there is a lack of clarity about the purposes of these schemes and that in some instances there may be alternative and better methods of achieving their purported aims.

1. UK legal framework for expert evidence

Any scheme has to be specific to the precise circumstances within the jurisdiction it serves. A brief explanation is required of the situation in the UK. (There are in effect three

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¹ 99 Eng. Rep. 589 (1782).

² Learnt Hand, Historical and Practical Considerations Regarding Expert Testimony, 15 HARV. L. REV. 40, 42 (1901).

³ <http://www.forensic.gov.uk/html/company/history/>.

⁴ <http://www.forensic-science-society.org.uk/AboutUs>.

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jurisdictions in the United Kingdom: England and Wales taken together, Scotland, and Northern Ireland. The basic principles are very similar but the actual law and nomenclature varies. This description is of English law).

Court procedure is adversarial as opposed to inquisitorial. Law enforcement officers investigate and will usually only consult the prosecuting authorities (typically the Crown Prosecution Service - CPS) towards the end of their enquiries unless the circumstances are difficult or controversial. The CPS formulate the precise charges. In a trial at Crown Court both prosecution and the defendant(s) have their own counsel – nearly always barristers. The role of the judge is to chair the proceedings and rule on points of law; matters of fact are decided by a jury. In less serious cases, heard in a Magistrates' Court, there is no jury and a "district" judge assesses both fact and law but must be careful to distinguish between the two. (There is also a procedure where there are lay magistrates advised on points of law by a court clerk but I will omit this in the interests of simplicity).

There is no equivalent of the examining or supervising judge as found in the "civil" or code-based jurisdictions of the type that originated in mainland Europe.

English law makes a distinction between technical evidence and expert evidence. In the former, a witness carries out a technical investigation or procedure and then reports without comment on the findings. In computer forensics examples may include the exercise of safely imaging a hard disk or producing the results of a keyword search. The expert witness by contrast gives evidence based on experience and opinion. The criteria are set out in an Australian case adopted in England, *Bonython*.⁵

- (1) "whether the subject matter of the opinion is such that a person without instruction or experience in the area of knowledge or human experience would be able to form a sound judgement on the matter without the assistance of a witness possessing special knowledge or experience in the area";
- (2) "whether the subject matter of the opinion forms part of a body of knowledge or experience which is sufficiently organised or recognised to be accepted as a reliable body of knowledge or experience, a special acquaintance with which by the witness would render his opinion of assistance to the court"; and
- (3) "whether the witness has acquired by study or experience sufficient knowledge of the subject to render his opinion of value in resolving the issues before the court".

The expert's over-riding duty is to the court, not to those who instruct.⁶ The decision to accept some-one as an expert is for the judge who will base it on the stated qualifications and experience. The decision is made at a preliminary hearing. It is open to an opposing counsel to query any such decision though this is relatively rare.

At the moment there is no equivalent of the US *Daubert*⁷ type procedure which makes the judge the assessor, as

⁵ (1984) 38 SASR 45, 46 to 47 (Supreme Court of South Australia).

⁶ CPR 33.2 (http://www.justice.gov.uk/criminal/procrules_fin/part_33.htm).

⁷ *Daubert v Merrel Dow* add ref.

a matter of admissibility, of the "general acceptability" or "reliability" of specific scientific knowledge and hence forensic methods. However there are now firm proposals that a version be adopted into English law.⁸

Most law enforcement agencies employ staff to carry out routine computer forensic examinations. Sometimes the staff are sworn law enforcement officers, sometimes civilian employees. Increasing use is made of external companies who carry out the work under contract. In most instances the main output is technical rather than expert evidence. Where expert evidence is needed for court purposes, the same person may be able to give it, though there can be problems if the individual has been part of the original investigation as there may then be a question whether they can subsequently act with an over-riding duty to the court. Thus either the law enforcement agency or the Crown Prosecution Service may employ someone else to provide the expert evidence. This is particularly likely if the evidence is to include extended and impartial background information and description.

Defence experts are recruited – "instructed" – by the defendant's solicitor. (In England the solicitor is the lawyer who deals direct with the client/defendant while the barrister is the specialist who addresses the court⁹). Nearly always in criminal cases the defence lawyers and the expert are paid out of public funds under the Legal Aid scheme. In order for an expert to be employed, typically the barrister will write a note – an Advice – saying why one is needed and setting out draft instructions. The solicitor finds a likely candidate who must then provide an estimate for approval – "Prior Authority" – by the Legal Services Commission (LSC). If the LSC decline or counter-offer on the estimate, the solicitor can appeal and ultimately go to court for guidance/a ruling.

Defence experts tend to be providers of opinion rather than pure technicians.

There is also provision in the Criminal Procedure Rules for judges to order opposing experts to meet and set out their points of agreement and disagreement – CPR 33.6. Elsewhere I have written about the virtues of this arrangement.¹⁰

In the civil procedure – where the dispute is between individuals and/or businesses – experts are employed by the respective solicitors. If they are to give evidence of opinion the judge must agree as to the expert's competence and experience and give permission that expert evidence can be tendered. The main provisions appear in Civil Procedure Rule 35.¹¹ As in the criminal procedure, the over-riding duty of the expert is to the court.

In civil proceedings the "over-riding objective" involves, among other things, saving expense and proportionality of

⁸ Law Commission: Expert Evidence in Criminal Proceedings in England and Wales (Law Com No 325) http://www.lawcom.gov.uk/docs/lc325_web.pdf. There was an earlier consultation: Law Com No 190. Note: the Law Commission is the official body for suggesting detailed law reform. The slightly-similarly-named Legal Services Commission dispenses publicly-funded legal aid.

⁹ Confusingly, there are now solicitor-advocates who are allowed to address the court, but their use is still relatively rare).

¹⁰ *Meetings between experts: a route to simpler, fairer trials?* Sommer, P, Digital investigation, 5 (3–4). pp. 146–152. ISSN 1742–2876.

¹¹ http://www.justice.gov.uk/civil/procrules_fin/contents/parts/part35.htm.

costs. The parties are required to sit down and see how far they can limit the scope of the dispute. One frequent consequence is a requirement for experts to meet – rule 35.12. There is also the possibility of instructing a single joint expert – rule 35.7. Normally this is under the supervision of the court and with both parties being liable for the expert's fee.

Experts in civil cases must thus not only know their own subject but be able to attend and manage meetings with an opposing expert. Single Joint Experts must have the skill to deal with opposing parties – a task which is not easy if one party is less keen than the other and the expert must make their own recourse to the court to force a ruling about co-operation.

2. The requirement for accreditation

It will be seen from the above description that there are therefore several different classes of people who in various circumstances need to be able to assess expertise or expert competence. It might be helpful to list them out:

- Law enforcement agencies in recruiting permanent staff as technicians
- Law enforcement agencies in recruiting permanent staff capable of giving expert evidence
- Law enforcement agencies in forming contracts with forensic services companies
- Law enforcement agencies in seeking individuals to act as expert witnesses
- Prosecutors in seeking individuals to act as expert witnesses
- Defence lawyers in seeking individuals to act as expert witnesses in criminal matters
- Legal Services Commission, in determining whether and to what extent to grant Prior Authority for legal aid in respect of an expert
- Lawyers in civil litigation in seeking individuals to act as expert witnesses
- Lawyers in civil litigation in seeking individuals to act as a Joint Single Expert
- Judges in assessing whether an individual should be allowed to tender expert evidence, and to what extent
- Jurors, who have to form an overall view of all the evidence placed before them and may need to know something of the qualifications and experience of any expert who appears before them.

3. How experts are actually sourced

There is no recent unambiguously reliable research to show how experts are actually sourced and recruited. The problem is at its most acute for lawyers; law enforcement agencies and prosecuting authorities have a routine requirement for a large number of expert forensic specialists whereas most solicitors may only seek a particular specialisation very occasionally. And although through the increase use of computers in the population as a whole is changing this, the occasionalism applies to computer forensics.

What follows, therefore, is based on informal anecdote and personal experience.

Overwhelmingly the most popular method of sourcing expertise is word of mouth/personal recommendation. Thereafter there are a number of Expert Directories of varying levels of worth.

The Law Society, the professional body for solicitors, used to publish one but a few years ago sold their interest to a large established legal publisher, Sweet & Maxwell, which is now owned by Reuters Thompson. It also publishes the Bar Directory of barristers. The *Expert Witness Directory* (<http://www.sweetandmaxwell.co.uk/Catalogue/ProductDetails.aspx?recordid=4344&productid=416722>) is available in print, online and on CD. There is a vetting scheme – recommendations from instructing lawyers – and a Code of Practice¹²; basic entries to qualifying experts are free but for a fee entries can be expanded. It claims 2500 experts in 1800 specialities. The UK Register of Expert Witnesses (<http://jspubs.com/>) has been running since 1988 and also publishes in print, on CD and online. It too features independent vetting and its lead figure, Chris Pamplin, is a prominent campaigner on expert witness matters. You can register as vetted or unvetted and there are three “service levels”, which refer to the size and quality of the entry display. It claims 2400 experts.

There are also some other expert directories which appear not to carry out mandatory vetting and where the main qualification for entry appears to be payment of a fee: www.expertsearch.co.uk, established in 1996; <http://www.expertwitness.co.uk> which also has a sub-website: <http://www.expertcomputer.co.uk> and also dates from 1996; <http://www.xproexperts.co.uk> which started in 2006.

A number of magazines aimed at lawyers run expert witness supplements but do not appear to vet those who advertise in them. There are also advertising and listing opportunities on the web and many experts have their own websites which are, at the least, searchable via Google, Bing and the like. There is no check on any of these.

All of these sources allow experts to refer to qualifications they claim to have received. The problem for recruiting solicitors is to know how much merit to attach to them. For example: a university degree is likely to indicate that some-one in the past has been able to demonstrate their ability to conduct research at a particular level. University courses and examinations are subject to both internal scrutiny by the authorities in that university and by external academics. However the course syllabus may or may not be relevant to the specific forensic specialisation sought and the degree provides no guarantee that knowledge and skills have been kept up-to-date since the degree was awarded. University certificates and diplomas are not subject to the same level of external scrutiny as full degrees. There are a very large number of training courses specifically aimed at computer forensics, many of which refer to being “certified”. Many also say that candidates can use post-nominals – a whole alphabet-spagetti soup of letters after their name. Some of the training organisations also

¹² http://www.legalhub.co.uk/legalhub/app/info/prepare?docType=expert_entries&rs=&vr=&bctocguid=1e2a652a002c711db85b9d734e660a063&ststate=S&mode=expertcode.

offer courses in non-forensic but related topics: computer security management and penetration testing, for example. The names of the courses do not always spell out their actual content.

Their very quantity creates difficulties for solicitors. What are the syllabuses for these courses; what is the quality of the trainers and the training institution; how long does the course last; are the courses specific to one particular product or of general validity; what were the entry qualifications; is there an assessment process at the end – and do people ever fail? And so on. None of this is to suggest that there aren't good courses available in the UK and elsewhere – the problem is that solicitors and others with a need to assess competence are unlikely to be able to decode from the lists of courses and post-nominals the information they need.

Obviously in all of these circumstances – word of mouth, expert directory, advertisement – it is up to the recruiting solicitor to make additional enquiries to be satisfied about the quality and eligibility of the expert. From personal experience the quality of these enquiries varies: some solicitors ask for references immediately relevant to the proposed instruction and want to talk direct to the referring lawyer; others seem grateful simply to have found someone who promises to deliver.

All of these methods of sourcing are not of themselves sufficient to convince a judge to accord expert status.

4. Moves towards regulation

Historically as well as today a great deal of forensic science and particularly those situations where opinion is required has been medical in nature. It includes examination after bodily attack, post mortems, the actions of poisons on the body, the calculation of the extent of physical disability and the assessment of a whole range of psychiatric phenomena. Regulation of the role of and provision of a code of ethics for medico-legal experts is by the same mechanism that allows a medical professional to practice in the first place. There are a number of other situations where an existing professional body such as those for accountancy can also provide regulation for related forensic expertise.

In relation to technical as opposed to opinion evidence, some form of quasi-regulation, or at least partial guarantee of quality of work has also historically come from the publicly-funded forensic science labs. Firm funding for these started in the UK in 1935. The Met's lab was merged with what had become the Forensic Science Service (FSS) in 1996 which by then had been designated a government "executive agency". The FSS has been through a number of governance changes some at least designed to make it "profitable" and "competitive" against private forensic labs. The FSS is now due to close in March 2012 as the UK government feels it should no longer be subsidising such activity.

I will return to the consequences of this later but the FSS developed a number of key forensic techniques including many associated with DNA. There is also the Forensic Science Society (<http://www.forensic-science-society.org.uk/>), founded in 1959 in the UK and with members in 60 countries. Its focus is on forensic science as opposed to the provision of

expert opinion: "The main aim of the society is to encourage communication and collaboration by providing an arena in which forensic practitioners, researchers, academics and those working in related fields can congregate, communicate and invoke development of areas such as best practice, research, publication, quality and ethics in forensic case-work." It offers an accreditation scheme, but as a forensic scientist, not directly in terms of giving expert evidence in court. It also has a register of scientists, but in April 2011, none of them used the keyword "computer". The Society has many similarities with AAFS, American Academy of Forensic Sciences, though AAFS does have a Digital & Multimedia Sciences section.¹³

The problem of regulation therefore has been for those specialisations where opinion evidence was being tendered but there was no existing professional body – and one where membership of which was essential before one could practice. In the computer domain there was, and is, the British Computer Society (BCS). It has been in existence since 1957, has a charter, over 70,000 members and many specialist groups. To be a Member or a Fellow, you have to pass a number of assessment criteria. But you can readily work in the ICT industry in the UK without membership; indeed, depending on what is included, well over 1m UK citizens work in ICT. The BCS has had a number of special interest groups to cover legal, security and forensic issues. But none of these provide any regulatory or quality framework. It has also in the past offered a list of Expert Witnesses but this appears to moribund. The main qualification for admission on the list is being listed elsewhere. As of Spring 2011 there are three people in the list, of which only one does criminal work.¹⁴ When it was a little more active the focus seems to have been on disputes involving computer contracts as opposed to crime. A further factor that seems to have inhibited the development of the BCS Expert Witness list was concern that the Society might become liable if a recommended expert was negligent.

Another potential route to expert witness quality has been professional bodies specifically for such witnesses. The Academy of Experts (<http://www.academy-experts.org/>) was set up in 1987 and describes itself as both a professional society and a qualifying body. Members have to provide a current CV, a synopsis of expert work, copies of professional certificates, details of courses attended, a sample report and at least three references from instructing solicitors. The Expert Witness Institute (<http://www.ewi.org.uk/>) dates from 1996 and requires references from two instructing lawyers. To outsiders the two organisations seem very similar in their membership requirements and their rivalry has been an irritant to all but their respective most ardent members. However the two organisations did come together to promote a code for expert witnesses¹⁵ which fits closely with the requirements of the official Civil and Criminal Procedure Rules. Both the Academy and the Institute lobby heavily for the interests of expert witnesses both in terms of changes in the law and on

¹³ <http://www.aafs.org/digital-multimedia-sciences>.

¹⁴ <http://www.bcs.org/category/6003>.

¹⁵ <http://www.ewi.org.uk/files/the%2520law%2520and%2520you/CodeofPractice.pdf>.

rates for payment. The organisations thus combine a form of self-regulation with political and financial representation. There is also a Society of Expert Witnesses (<http://www.sew.org.uk/>) founded in 1995.

During the late 1980s and 1990s a number of miscarriages of justice in the UK prompted reviews of the criminal justice system – and the reviews included an examination of the role of expert evidence. Not all of the miscarriages involved technical or expert evidence – other issues were the failure of the police properly to investigate, police misuse of under-cover officers, and concealment of evidence from the defence and the court. But some did, some “child death” cases in which mothers were imprisoned were particularly controversial as the paediatrician who acted as expert had strayed beyond his competence and made judgements based on a misunderstanding of statistics – and was not properly challenged at trial.¹⁶

Expert evidence was considered at length by Lord Justice Auld in his *Criminal Courts Review* of 2001.¹⁷ He spent some time at looking at the procedural rules governing expert evidence, recognising that the issue is not only the evidence itself, but the points at which and the manner in which it can be tested. His recommendation that the rules be formalised were accepted and are now in the Criminal Procedure Rules referred to earlier in this paper including the rule that the expert’s over-riding duty is the court and not the person pay his bills or salary. Of assessment of expert witness competence he had this to say:

130 The competence of an expert witness is governed by the common law. Whether, in any particular case, a witness is qualified to give expert evidence is for the judge. However, there is no single or comprehensive guide to the courts in the form of a professional register of accreditation to which they or parties may have recourse when considering the suitability of proposed expert witnesses..... The Forensic Science Society and the Academy of Experts were already in the being, each with its draft Code of practice. Since then the field has become more crowded. In 1995, the Society of Expert Witnesses and in 1996 the Expert Witness Institute were founded, each producing its own Code of Practice and maintaining a membership list. And most recently, in early 2000, the Council for the Registration of Forensic Practitioners, a company limited by guarantee was established with financial support from the Government. The Law Society maintains an annual Directory of Expert Witnesses and there are also other associations of experts from particular disciplines... It seems to me that it would be sensible, make better use of resources and be of more value to users and the Courts, if the work of all these bodies could be concentrated in one. It could then set, or oversee the setting of, standards, maintain a register of accredited forensic scientists in all disciplines and regulate their compliance with those standards.

¹⁶ Meadows – add refs.

¹⁷ <http://www.criminal-courts-review.org.uk/ccr-11.htm>.

5. Council for the registration of forensic practitioners

Eventually the Council for the Registration of Forensic Practitioners failed when government funding was withdrawn in March 2009, but it is useful to examine how it operated and what lessons can be learnt. Work began in earnest in 2001–02. As one might expect there was a Code of Ethics and a governance framework of committees. The basic principles were that applicants needed to prove their existing qualifications, show ongoing training, provide some references but also to submit to a detailed assessment.

The applicant had to provide a list of recent reports out of which the assessor selected three or more which were then supplied, if necessary with anonymisation. Using the totality of the supplied documentation the assessor had to fill in a form which required him/her to be satisfied that 10 or so criteria were satisfied. To prevent the situation where friends might assist friends, there was an apparatus of review both by a lead assessor and by separate scrutineers. Central CRFP staff carried out the verification of qualifications and all assessors were required to undergo training. Having a centralised resource also made it easier to collect information about the various training courses and university diplomas available and assess their value in terms of service to the justice system.

Work on a digital forensic speciality started in 2004, with contributions from law enforcement agencies, the Academy of Experts, the British Computer Society and others. I attended some of the meetings and at one of them was nominated as a Joint Lead Assessor. For most of the life of CRFP’s digital forensics speciality my co-Joint Assessor was Geoff Fellows, then a serving police officer and Chairman of the UK’s First Forensic Forum (F3) (<https://www.f3.org.uk/>). The arrangement made sense in terms of balance as at the time my main experience was for the defence while Geoff’s was for law enforcement.

Both the overall CRFP project and the specific arrangements for the digital forensics specialities had their critics. Some analysts questioned whether CRFP was necessary at all. Dr Chris Pamplin, editor of the UK Register of Expert Witnesses, wrote:

“The CRFP, in creating an overarching system of professional skills accreditation and pushing for it to become mandatory, sought to usurp the function of the professional bodies and the courts by pre-selecting experts who are ‘sufficiently expert’ to be heard.

“Yet the accreditation it offers would not prevent its members becoming involved in miscarriages of justice similar to those perpetrated in the 1970s and ’80s. No accreditation scheme can prevent a thoroughly competent expert getting it wrong on the day. So, all that is left is the ability of the CRFP to deal with an expert found wanting after the event. The courts have a perfectly good, if slow, system of appeal to deal with such instances. Furthermore, those who have a natural remit to accredit experts – the professional regulatory bodies – already have far greater powers to discipline their members than the powers commanded by the CRFP.

“The CRFP scheme always appeared to us to be unworkable, and the expert community has voted with its feet.”¹⁸

Of the digital forensics assessment process, some critics thought it insufficiently rigorous and suggested that applicant should be tested against specially prepared forensic hard disk¹⁹ and a few others questioned whether some of the assessors had the necessary experience and authority.

Assessors were recruited, trained and let loose on applicants. In the end, however, only a small proportion of the UK’s digital forensic practitioners signed up and by then the overall CRFP scheme was in difficulties.

By August 2008 CRFP had 2730 individual registrants across 29 specialities and over 250 assessors and lead assessors.²⁰ What then went wrong?

The first problem was that there was no element of compulsion and without it, little motivation for large numbers of people to become involved. It would have been impractical to compel the courts only to hear expert evidence from registered practitioners as the courts frequently need one-off expert advice. However an arrangement could be envisaged whereby “professional experts”, those who provide, say, more than three reports a year, should be registered and accredited. Enforcement could either be by judge at a preliminary hearing, in effect asking why a non-registered expert’s testimony should be admitted, or, in the case of criminal defence experts, by a reluctance to provide Legal Aid for non-registered experts without very good reason.

But the overwhelming problems were economic. Almost any similar accreditation scheme in almost any jurisdiction faces the same issues. It costs money to maintain a central administration facility, to have a web site, to run meetings and conferences and to train assessors. Assessors are themselves senior experienced practitioners and whilst no one becomes an assessor to become rich, compensation for lost earnings is a necessity. CRFP paid £40 per assessment which, for the digital forensics speciality took around 3 h. At the time defence experts could expect £100/hr for publicly-funded legal aid work and more for privately-funded civil disputes. For assessors within law enforcement there were other problems: almost all had a long back-log of case-work which had to have priority over CRFP assessments). But if CRFP had sought to charge more to applicants – the fee was £165 - without any compulsion to register, few would see any point in applying. There is a hard economic rule in the accreditation/assessment business: the more complex and through the assessment process the higher the cost; the higher the cost the fewer the applicants.

Factors conspired to slow things down in a number of ways. If assessors were badly paid they might delay their work in favour of urgent (and better paid) case-work. Requiring applicants to submit lists of their recent reports and then supply redacted versions of ones selected for scrutiny by

assessors took up a surprising amount of time. Once there were delays in the process there were additional costs in chasing-up.

CRFP was almost certainly optimistically under-funded at inception and the hope that it would become self-sufficient was in vain. But its efforts could not be cross-subsidised by other activities of a professional body. The BMA provides many services for its members which can support each other financially. Where then was the continuing funding to come from? Even with an element of compulsion, many applicant fees were going to be paid indirectly by the public, either by law enforcement agencies for their employees and sub-contractors or by Legal Aid as expert witness rates would have had to rise – or the supply of publicly-funded experts would diminish. That left the government with having to support the CRFP indefinitely. In the end, and at short notice, funding was withdrawn in early 2009.

6. Forensic science regulator

The solution, the UK government hoped, was via a Forensic Science Regulator (FSR). The post was announced in July 2007, first existed in a “shadow” or preliminary format and in February 2008 a permanent appointment was made together with a Forensic Science Advisory Council. The position of digital forensics had been considered during the “shadow” period and a specialist group was formally constituted in July 2008. I had been involved in the preliminary discussions and have been a member of the specialist group since inception.

The FSR “is a public appointee whose function is to ensure that the provision of forensic science services across the criminal justice system is subject to an appropriate regime of scientific quality standards”.²¹ His activities breaks down further:

- quality standards applying to organisations and scientific processes
- guidelines for validating new developments in forensic science
- competence standards applying to individual forensic practitioners.

The focus is on providing high quality forensic science services to the criminal justice system. Draft Codes of Practice were issued in July 2010²² and in early 2011 a review of research and development in forensic science was announced.²³ ISO 17025, essentially a standard for testing and calibration laboratories, is considered to provide a useful basis for the FSR’s work.

As with many standards and codes there is a persistent problem of detail bloat. There are arguments between those who think that the greater the number of items in a check-list

¹⁸ <http://www.jspubs.com/Experts/ewire/itemtext.cfm?ewid=163>.

¹⁹ This would have caused many practical problems. If you didn’t prepare a new test disk each time a group were up for assessment you ran the risk that candidates would cheat.

²⁰ CRFP’s Submission to the FSR review, August 2008.

²¹ <http://www.homeoffice.gov.uk/police/forensic-science-regulator/>.

²² <http://www.homeoffice.gov.uk/publications/police/forensic-science-regulator1/codes-conduct-practise>.

²³ <http://www.homeoffice.gov.uk/publications/police/forensic-science-regulator1/tor-forensic-science-review>.

to be validated and the larger the quantity of documentation created during the compliance and assessment exercise the better the standard/code is, and those who become concerned that the costs are out of proportion with the supposed defects that are alleged to be remedied.

There are a series of qualifications specifically directed at technicians in forensic science labs under the “Skills for Justice” heading.²⁴ At the time of writing there are 44 national Occupational Standards. However none of these are specific to computer and digital work.

Indeed there are particular problems for digital forensics. A key feature of the work of any forensic lab is that procedures and tools have been properly tested. Normally this implies one or more peer-reviewed journal articles setting out the validity of the science and a separate set of tests for such tools etc that have been developed to exploit the particular discovery. I have argued elsewhere²⁵ that rates of change in ICT, and which digital forensics is forced to track, are greater than the usual cycles of research, article writing, article publication and production of tools. Moreover most digital forensic practitioners routinely use analysis programs which contain very large numbers of items of digital forensic knowledge; examples include EnCase, AccessData FTK and X-ways Forensics. These suites are frequently updated and really each new version or patch should be fully tested before deployment. However, were one to await full publication and full testing the tools would always be significantly behind the ways in which computers are used in the outside world. Would society be content to let a criminal go free because a tool had not been exhaustively tested?

This form of forensic science regulation potentially addresses a number of important problems: labs where submitted items are lost, mis-labelled, contaminated, poor test methodologies. Certifications of compliance can give law enforcement agencies and the like the confidence to place work with such labs. If the Forensic Science Service is to be closed down in March 2012 and all forensic science services thereafter are provided competitively on a commercial basis, certification is likely to be important in the awarding of contracts. One option that the FSR makes possible is the certification of forensic laboratories as opposed to, or in addition to, the certification of individuals.

But in the UK there is currently no single certification/accreditation scheme which assists lawyers in locating experts for criminal defence and civil litigation. And any quality label on a forensic lab or its staff does not directly support a judge when he has to make decision whether to allow an individual to give expert opinion evidence.

7. A future for assessing UK forensic expertise?

Certifications, accreditations, registration, qualifications are usually not an abstract good in themselves. They need to be

seen as a means by which an audience, or a market, can assess some-one’s suitability for a role within a particular defined context. It is all too easy to produce long lists of criteria and set up elaborate structures for supervising schemes and lose sight of what value they might eventually deliver.

As we have seen from the case of CRFP and from the well-developed related quality and security standards such as ISO9000 and ISO27000, complex ambitious schemes can carry high costs which exceed any value provided. In April 2011 a government minister argued for providing a statutory framework for the FSR.²⁶ That might seem to be a good idea but at the moment there is little indication that a purely voluntary and market-influenced approach is failing and too much enforced regulation may put costs up.

A question I have been asking myself is how far there are other mechanisms, besides an accreditation scheme, to satisfy at least some of the needs of the various players in the market place:

- the needs of law enforcement to obtain good quality forensic work in the “technical” as opposed to “opinion” category are addressed by the current schemes of the Forensic Science Regulator. There is a question of how far a very detailed accreditation scheme would provide value for money. The costs of the scheme will have to borne, indirectly, by the tax payer. It could be argued that a generalised Code of Good Practice would provide adequate safeguards. It could also be argued that the National Occupational Standards for forensic science make a further and separate accreditation under the Forensic Science Regulator or a version of ISO 17025 more than is actually required.
- the Legal Services Commission, as the provider of publicly-funded legal aid already receives copious documentation about experts – their reports, their works-sheets, and notice from the courts if work has been unsatisfactory. It appears the LSC have not been collecting and analysing this information
- in terms of the point at which a judge has to decide whether to allow some-one to give opinion evidence, there is already increasing use of case management powers through the mechanism of pre-trial hearings – Pleas and Case Management Hearings (PCMH) and there seems no reason why more time should not be expended then on the issue of experts to determine actual experience and the significance of specific claimed qualifications.²⁷ This might be better than any generalised expert accreditation. This is what the law Commission said in its Consultation paper No 190²⁸: Although we make no proposals in this respect, we accept that a scheme of compulsory accreditation or registration for expert witnesses in criminal proceedings could filter out *some* unreliable evidence at an early stage in the proceedings. A witness who has shown him or herself to be unreliable on one or more occasions, or deficient in his or her professional development, could lose his or her

²⁴ http://www.skillsforjustice-nosfinder.com/suites.php?suite_id=20&page=3&per_page=20&view=.

²⁵ Sommer, P *Forensic Science in fast-changing environments* Science & Justice, Volume 50, Issue 1, Pages 12–17.

²⁶ <http://www.publications.parliament.uk/pa/cm201011/cmselect/cmsctech/uc855-iii/uc85501.htm>.

²⁷ The actual basis would be under Criminal Procedure Rule 33.

²⁸ <http://www.lawcom.gov.uk/docs/cp190.pdf>.

accreditation and thus be unable to testify again. No doubt a similar outcome would be achieved if accreditation were to become a requirement for the allocation of public funds from the Legal Services Commission. A failure to receive or maintain accreditation would prevent the expert from being able to provide expert testimony unless he or she was privately-funded or willing to provide a gratis opinion. In isolation, however, we believe that a system of accreditation or registration would bring little if any additional benefit in terms of quality assurance. It might well also be impracticable, not to say unduly costly, given the wide variety of expert evidence tendered in criminal proceedings”

- if the Law Commission’s proposals to develop a *Daubert* series of tests on the general acceptability of an item of novel scientific or technical evidence²⁹ are accepted and passed into law, judges will be able to exercise further control. However this would not be on the expert as such, but on the science, and presumably would only apply where there was a new finding or procedure, not where an expert was providing opinion in a well-established area.

This then leaves lawyers in criminal defence and civil matters: at the moment, as we have seen, they seem to rely principally on word of mouth and the various expert directories, with membership of professional bodies and the various associated codes of ethics as additional comfort. Yet they have to decide whom to instruct before asking the Legal Services Commission for funding and before going to judge and asking that the witness be allowed to give expert opinion evidence. The current Forensic Science Regulator scheme has nothing to offer them. The CRFP scheme provided some support but there seems little prospect in the current financial climate that it or something similar will return because the cost aspects will always be there.

This means lawyers could probably benefit from a single, authoritative expert directory which, at the least, required vetting in the form of up-to-date references as opposed to the current situation where there are several competitors as well as the lists (accompanied by some form of vetting and a Code of Ethics) maintained by the Academy of Experts and Expert Witness Institute. It is rather a pity that the Law Society, the professional body for solicitors, passed their publication on to a commercial entity, Sweet & Maxwell, which inevitably has less authority. But such a directory can only be a first point of reference; there would still leave a heavy burden on solicitors

to understand the actual qualifications and scope of expertise of their candidate. In the current economic climate where the government is seeking significant reductions in publicly-funded work by lawyers – crime, family law, the areas where forensic expertise is so often required – the immediate prospect is that more bad or inadequate defence experts will find their way into the courts.

7.1. Conclusions: tests for accreditation schemes

Over the years as well as following closely the development of UK policy I have watched with interest proposals for accreditation and education as they have emerged in other jurisdictions. During 2005 I was one of very few non-US members of the Technical Working Group for Education and Training in Digital Evidence set up by the US Department of Justice – TWGED.³⁰

Here then, are some final questions for those contemplating and formulating an accreditation scheme:

1. What or who is the audience (or market) for the scheme: is the police, the courts, defence lawyers, judges, the public as a whole
2. Is the aim to identify competence or to reward excellence, or to exclude obvious incompetence?
3. Is there a danger that of confusing accreditation with an academic or quasi-academic qualification?
4. How far should accreditation be compulsory, and on what basis?
5. Is the accreditation to be for individuals or for a forensic laboratory or other organisation?
6. Will applicants be frequently re-tested so that they keep their skills and knowledge up-to-date?
7. How does the scheme cope with a fast-changing technical environment affecting the underlying circumstances of a forensic investigation?
8. Are there calculations of the costs of the scheme? The more intensive the investigation of an applicant, the greater the cost. But if cost is too high, there may not be enough applicants. Who will bear the costs?
9. Can some of the purported aims be achieved by other means, e.g., via better court procedures in assessing competence, by more rigorous testing prior to instruction by lawyers, by more reliable directories with vetting procedures?

²⁹ Law Commission: Expert Evidence in Criminal Proceedings in England and Wales (Law Com No 325). http://www.lawcom.gov.uk/docs/lc325_web.pdf.

³⁰ <http://www.ncjrs.gov/pdffiles1/nij/203099.pdf>.