Forensic Science Regulator
Overseeing Quality

Digital Forensics Specialist Group

Minutes of the meeting held on 13th December 2018, at the Home Office, 2 Marsham Street, Westminster, SW1P 4DF

1. Welcome and apologies

1.1 The Chair welcomed all to the meeting. A list of attendees is available at Annex A.

2. Minutes and actions of the last meeting

2.1 The minutes of the meeting held on the 26th June 2018 were agreed by members and had been published on GOV.UK.

2.2 *Action 2: FSRU to collaborate with MPS representative to produce an article ahead of next meeting.* This action was still in progress.

2.3 *Action 4: Dstl and NPCC DCG representatives to liaise regarding guidance for open source.* The DFSG Open Source sub-group had been established to advise the Regulator on quality standards for open source forensic investigations. The sub-group had not yet reported to the Regulator and so an update from the sub-group would be required at the next DFSG meeting. The DFSG would then define some clear questions for the sub-group to investigate. This would supersede Action 4 from June 2018, which was now marked as closed.

Action 1: Jennifer Housego to summarise progress from the open source sub-group and present this to the DFSG at the February 2019 meeting.

2.4 The composition of the Open Source subgroup was discussed. It was suggested that Tim Watson should join the group and that the Regulator should re-assess the membership and ensure that it was appropriate in order to take this work forward.

Action 2: Tim Watson to join Open Source sub-group and the Regulator to review its membership

2.5 *Action 5: The Regulator to meet NPCC representative and discuss whether third party applications should be out of scope from the level 1 service and how this should be reported in the validation declaration.* This action was in progress. An accreditation pilot for frontline kiosks would run in January 2019 with third party applications out of scope. This was due to the findings of UKAS, who in reviewing the Dstl validation study observed limitations on the extent of data obtainable from third party applications and opined that this would not be an accreditable activity. This did not prevent kiosks from being used to obtain data from third party applications, but this would need to be accompanied by a statement of limitation that data may be incomplete. The MPS would be conducting work to look at the end-to-end process and whether this would be accreditable. Input from Dstl was welcomed.

Action 3: Mark Stokes to liaise with Neil Cohen of Dstl to assess how download of data from third party applications could be improved and accredited

2.6 All other actions were complete or would be covered under later agenda items.

3. Statement of Accreditation Requirements

Digital in crime scene and network forensics

3.1 The statement of standards and accreditation requirements for all forensic units providing forensic science services contained within the Regulator's Codes of Practice and Conduct (the 'Codes') had been updated to explicitly include incident scene activity as recommended by the DFSG. The DFSG were asked to consider the comprehensibility, timing and impact for the wider, non-specialist community, in particular those involved in digital media investigations.

3.2 Since network forensics did not require accreditation to ISO 17025 by 2017 but live-box[1] forensics did, activities where the two overlapped were problematic. If networks were to be brought into accreditation, special consideration would need to be given as to how to do this effectively. A definition of network forensics had been developed by the DFSG networks sub-group.

3.3 At a crime scene, individuals would need to be competent to understand how their activities might affect the network. It was also recommended that contemporaneous note-taking would be required. Categorisation of crime scenes would be helpful as company networks would present different and greater challenges as compared to domestic networks. This was not currently clear in the explanation and proposed definition written by the DFSG network subgroup, which was viewed to overlap too heavily with normal digital forensics activity.

3.4 Since the risk existed for network forensic activities that evidential capture could not be repeated, crime scene managers would need to be competent in digital evidential capture. The scope of the relevant quality standards for individuals attending the crime scene would also need to be defined. There would be a requirement to define the roles and competencies of those activities in scope and ensure the people asked to do those roles are competent to do so.

3.5 It was suggested that a sub-group should be formed to assess crime scene management in the digital age. This would involve individuals undertaking both digital and network forensic activities, but also crime scene examiners and forensic managers. It would be helpful to describe network forensic scenarios to guide non-experts when conducting investigations to ensure evidential capture is carried out appropriately and the digital crime scene is preserved.

[1] Live-box forensics preserves and harvests evidence from a computer's physical memory including the 'volatile' information contained in memory chips which is lost when the computer is turned shut down.

3.6 It would be of the upmost importance to be clear what was in scope for the standard and determine on what time-frame this is achievable. This could be facilitated by carrying out a dry-run exercise to identify activities and reduce risks.

Action 4: FSRU to establish a working group to determine the activities that would be in scope for an update to the digital forensics statement of requirements.

3.7 The Codes would remain as proposed for the current update and then would be updated again to reflect any extensions in scope.

4. Science and Technology Committee (Lords)

4.1 An inquiry into forensic science had been launched by the House of Lords Science and Technology Committee. There had been over 90 written submissions to the inquiry, and the committee had received oral evidence from over 30 individuals holding a wide range of experience within the forensic science sector.

4.2 During the evidence gathering process, views were expressed by a respondent that the current validation guidance issued by the Regulator did not require the method to be shown to be technically correct.[2] Alongside this, two recently published papers[3,4] had reached markedly different conclusions on the standards set by the Regulator for digital forensics. One argued that ISO 17025 was not fit for purpose, and the other argued that it was fit for purpose, but its current implementation was fundamentally flawed in relation to how validation is considered.

4.3 The Regulator had previously requested UKAS to review the implementation of digital forensics, looking at both the costs of gaining accreditation and the impact that it had. The review showed that the accreditation process had driven improvements across the range of management and technical areas. DFSG members were asked to advise the Regulator on whether the validation guidance and accreditation process were suitable, or whether modifications were required.

4.4 Members agreed that the general approaches set out in 17025 and the Codes were appropriate and helpful for validation and verification. Method validation for digital forensics was viewed as fundamentally challenging and was compounded by a lack of knowledge-sharing and published methodologies within the digital forensics community. One issue was a shortage of ground truth data to validate methods. It was suggested that case data might be used for validation, however this could mean that full validation details could not be shared with UKAS.

4.5 In was felt that the FSR's digital forensics guidance could be made clearer and should be updated. The examples included in the guidance were viewed as very helpful and it was thought they should be refreshed rather than removed.

4.6 The Regulator asked members whether they though it would be helpful to have a more publicly available set of requirements and information sharing on how digital

[2] See: http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/science-and-technology-committee-lords/forensic-science/written/89341.html

[3] Marshall and Paige (2018) *Digital Investigation* **27**: 23-29

[4] Sommer (2018) *Digital Investigation* **25**: 116-120

forensics tools are tested. It was thought that testing should be transparent, but this should be balanced against any potential adverse effects, e.g. manufacturers focussing to a greater degree on the tools being tested.

4.7 The Regulator had been invited by the Editor of Digital Investigation to submit a position paper on accreditation in digital forensics. The Regulator wished to write this based on data rather than opinion, hence drawing on the UKAS review. Several members agreed to work with the Regulator on the position paper.

Action 5: Regulator to liaise with Tim Watson, Roy Isbell, Mark Stokes and Neil Cohen to draft a position paper on accreditation in digital forensics for submission to the journal 'Digital Investigation'

4.8 Finally, the Regulator asked members how she should seek to constructively engage those who held criticisms of the regulatory system. It was suggested that a non-law enforcement group of small businesses could be established to collect a wider pool of views. A representative of the First Forensic Forum[5] (F3) had been appointed to the DFSG some time ago however had not been in attendance for some time. F3 were viewed as a potential conduit through which better communication with small businesses could be established and so it was agreed that they would be approached again to encourage attendance of the DFSG.

Action 6: Roy Isbell to approach the Chair of F3 and invite them to attend DFSG meetings

5. Cell site pilot

5.1 A pilot of cell site validation had commenced a year and a half previous but had been paused due to various issues. The FSRU had written out to industry a month previous informing them that pilot would recommence. Expressions of interest from five providers had been received. Timescales would be determined for the pilots which were hoped to commence in early 2019.

6. Image Enhancement and Image Comparison

6.1 The Regulator informed members that the forensic image comparison community had struggled to agree how it should articulate the strength of evidence resulting from image enhancement and comparison, as a function of both image quality and the features in common in a comparison. The Chartered Society of Forensic Sciences (CSFS) had adopted a significant section of the community as its Forensic Image Analysis Division (FIAD) and had facilitated discussion of the issues. A number of referrals to the Regulator had concerned image comparison. The Regulator and the CSFS shared concerns that image analysis experts were, on occasion, failing to stay within the bounds of their expertise and were failing to communicate effectively to the courts the limitations of work carried out. Imagery experts had also presented to the Regulator a number of errors caused by comparison experts failing to understand the limitations of certain imagery and artefacts that may be present.

[5] F3 is a non-profit organisation which provides training for digital forensic practitioners in the public sector, private sector or academia.

6.2 Following discussions with imagery experts, the Regulator’s draft statement of principles which must apply when presenting expert opinion in relation to image enhancement and/or image comparison when the images are derived from video footage was modified. Members were invited to comment in writing on the draft statement of principles by mid-January.

Action 7: DFSG Members to send written feedback to the Regulator on the draft statement of principles for image comparison by mid-January 2019.

7. Video analysis

7.1 An appendix to the Codes regarding video analysis[6] was being updated. The update included being explicit on what constituted expertise for image analysis and comparison. Members were invited to send any written comments on the appendix to the FSRU by mid-January.

Action 8: DFSG Members to send written feedback to the FSRU on the draft updates to the appendix to the Codes concerning video analysis by mid-January 2019.

8. CCTV footage

8.1 In the Codes there was not currently an accreditation requirement for the capture of CCTV footage from a working CCTV system. Image comparison experts had fed back to the Regulator that:

- they were unable to obtain working copies of footage in a native format for analysis from the prosecution; and
- there were incidents where only phone/bodycam recordings of CCTV being played back is available, with apparently no original footage recovered and resulting in poor quality images.

8.2 Improvements in practice were required and the DFSG were asked to consider the issue and advise the Regulator accordingly.

8.3 Some members felt that capture of CCTV footage was a digital forensics activity and thus should come under accreditation, however others felt that issues of practicality existed. Home Office guidance had been issued on this activity in 2009[7]; although examples of best practice existed they were not implemented due to the volume of activity in this area. Capturing secondary images of CCTV is an activity that would be unlikely to cease due to the rapid requirement of images for intelligence purposes, but it was suggested that clear guidelines around when native footage was required would be helpful. Furthermore, basic training for operational policing staff on CCTV capture could help improve practices.

8.4 It was felt that the recovery of CCTV at scene was starting to decline due to the introduction of systems that allowed uploading of material by third parties to police

[6] Available from: https://www.gov.uk/government/publications/video-analysis-codes-of-practice-for-forensic-service-providers

[7] Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/378443/28_09_CCTV_OR_Manual2835.pdf

systems. As such, it was suggested that standards were introduced at the point of upload to police systems.

8.5 The Regulator summarised that it would be most effective to focus on competence in the first case to improve practices and asked that the NPCC representative shared the contact information of the relevant NPCC leads with her to move this forward.

Action 9: John Beckwith to send contact information for NPCC leads on CCTV to the Regulator.

9. AOB

9.1 The NPCC Collision Investigation Nominee provided an update on their work in collaboration with Dstl on speed estimation.

9.2 Progress had been made by the DCG Futures Group with the European Telecommunications Standards Institute on a third-party standard, which was nearly ready for publication. This would be added to the agenda for the next meeting of the DFSG.

Action 10: David Johnston to provide an update on the third-party standard at the next DFSG meeting.

9.3 NPCC and the Director of Public Prosecutions (DPP) had sought legal advice on the use of consent for taking possession of devices from witnesses and complainants and for processing those devices. National guidance would be issued through the NPCC around consent arrangements which would have an impact on workflow.

9.4 Bitesize videos had been produced by the NPCC to support an improvement in the understanding of use of digital evidence in cases. These were publicly available.

10. Date of next meeting

10.1 The next meeting would be held on Thursday 13th June in Westminster.

Annex A

Present

- Mark Stokes - Metropolitan Police (co-chair)
- Alex Macdonald - Home Office (co-chair)
- David Johnston - Gloucestershire Police
- Duncan Thurlwell - NPCC Collision Investigation Nominee
- Gill Tully - Forensic Science Regulator
- John Beckwith - Staffordshire Police
- Matthew Tart - CCL Group Digital Forensics
- Neil Cohen - Dstl
- Roy Isbell - Cyber Security Centre - University of Warwick/ CSFS
- Tim Watson - Warwick Cyber Security Centre
- Simon Iveson - Forensic Science Regulation Unit
- Penny Carmichael - HO Science Secretariat

Apologies

- Jennifer Housego - NPCC Open Source Nominee
- Simon Cullen - United Kingdom Accreditation Service
- David Compton - United Kingdom Accreditation Service
- Steve Dickinson - College of Policing
- Danny Faith - First Forensic Forum (F3) Steering Committee
- James Luck - Metropolitan Police
- Mark Bishop - Crown Prosecution Service (Brighton)
- Nigel Jones - University of Canterbury