



Fingerprint Quality Standards Specialist Group (FQSSG)

Note of the meeting held on 15 December 2016 at Meeting Room 1.10, West Midlands Police Headquarters, Lloyd House, Colmore Circus, Queensway, Birmingham, B4 6AT.

1.0 Welcome, Introduction and Apologies

1.1 The Chair, Gary Pugh, welcomed all to the meeting. A full list of attendees and apologies is provided at Annex A.

1.2 The Chair thanked Iain Borthwick from Greater Manchester Police for his contributions and support to the Fingerprints Quality Standards Specialist Group (FQSSG). Iain Borthwick was being replaced by the fingerprint enhancement lead Emily Burton, Head of Forensic Services, Greater Manchester Police.

2.0 Minutes of the last FQSSG meeting on 28 September 2016

2.1 The previous FQSSG minutes were approved as an accurate reflection of the discussion held and the Secretariat was asked to publish them.

Action 1: The FQSSG Secretariat to publish on GOV.UK the minutes of the FQSSG meeting held on 28 September 2016.

3.0 Actions and Matters Arising

3.1 The actions from the previous meeting were reviewed and the following updates provided:

3.2 Actions 1 and 2 on the metric fingerprint scales. Nick Marsh had purchased fingerprint scales and tested them in the Metropolitan Police Service. Testing of these fingerprint scales in other forensic units was agreed. No response had been received from Neil Denison and Karen Georgiou on the outcomes of their testing, so it was agreed that this action would be followed up. Nick Marsh would provide the fingerprint scales to Gary Holcroft for testing within Police Scotland.

Action 2: Secretariat to follow up with Karen Georgiou and Neil Denison on the fingerprint image scales testing, and Gary Holcroft to test the metric fingerprint scales within Police Scotland.

Action 3: Nick Marsh to provide the fingerprint scales to Gary Holcroft for testing with Police Scotland.

3.3 Helen Bandey suggested that the Home Office's Centre for Applied Science and Technology (CAST) colleagues, who previously worked in National Policing Improvement Agency (NPIA), could assist with the testing of the metric fingerprint scales, if required.

Action 4: Helen Bandey to ask CAST colleagues to assist Nick Marsh in the testing of the metric fingerprint scales.

3.4 Action 3: The escalation report on the IDENT1 Automated Fingerprint Identification System (AFIS) error. Previously a problem with the corruption of files on the IDENT1 AFIS system had been reported. The supplier had provided a formal report on the issue to the Home Office, and this company had also carried out a lessons learnt exercise. The FQSSG needed to be provided with feedback on the lessons learnt exercise in order to identify where quality procedures required improvements.

Action 5: June Guinness to arrange a meeting between FQSSG and Graham Camm's Home Office Biometrics (HOB) team in the Home Office, to review the reported incident of corruption to IDENT1 AFIS files, its causes, and to identify lessons to be learnt.

Action 6: June Guinness to arrange a meeting in January 2017 with Kirsty Faulkner, Graham Camm and Gary Pugh to discuss fingerprints accreditation requirements and escalation reporting for IDENT1.

3.5 Actions 4, 5 & 6 concerned the schedules for police fingerprint bureaux to gain accreditation to International Standards Organisation (ISO) 17025. An on-going concern existed in relation to whether police fingerprint bureaux were on schedule to achieve ISO 17025 accreditation for manual comparison by the Regulator's October 2018 target date. Richard Small was taking a lead on plans for fingerprint bureaux to gain accreditation and was compiling a position paper for the police forces, which FQSSG would be able to comment upon. This issue would become a standing item for future FQSSG meetings.

Action 7: FQSSG Secretariat to include the police forces fingerprints accreditation schedule as a standing agenda item at future FQSSG meetings.

3.6 Action 10: Development of a non-prescriptive guidance document on achieving accreditation alongside the fingerprint Appendix, to assist United Kingdom (UK) forensic units, including those in police forces, in their preparations to gain fingerprint accreditation. June Guinness would take a lead with the drafting of the document and would require input from all FQSSG members. Katherine Monnery would provide additional material from an earlier United Kingdom Accreditation Service (UKAS) workshop for police forces on fingerprints. A provisional title was suggested: Technical Assessors' Guide on gaining accreditation to ISO 17025 for fingerprint comparison.

3.7 As the Scottish Police Authority had experience of gaining accreditation for fingerprints processes, the chair asked Gary Holcroft to draft a note to outline the issues in gaining fingerprint accreditation.

Action 8: Gary Holcroft to commission a note setting out a timeline, with a list of issues in gaining fingerprints accreditation, based on the Scottish Police fingerprints successful accreditation experience.

Action 9: June Guinness to lead with the production of a draft “Technical Assessors’ Guide” to gaining accreditation to ISO 17025 for fingerprint comparison.

3.8 Action 12: Recruitment of UKAS fingerprints technical assessors. UKAS required additional technical assessors to deal with the fingerprints accreditation applications from forces. UKAS had sought nominations through the FQSSG for these posts and the secretariat has received applications. West Midlands Police offered the services of Michelle Painter to review the applications and provide recommendations to UKAS.

Action 10: Secretariat to send the fingerprint technical assessor applications to Michelle Painter, who will review them and produce a shortlist for UKAS to progress.

3.9 The remaining actions were either complete or were agenda items for the meeting.

4.0 Updated FQSSG Terms of Reference

4.1 The FQSSG had been provided with an updated Terms of Reference for the group. The main change was the addition of Appendix 1, which detailed the areas of expertise, person descriptions and nominating authorities for each required member of the FQSSG going forward. The nominee would be either a subject expert, or a manager overseeing the experts. These details needed FQSSG review, with consideration whether additional members were needed.

4.2 The College of Policing (CoP) member would have an observer role, given the changes occurring to fingerprints training at CoP. Previously, a member from the Chartered Society of Forensic Sciences (CSFS) had not been formally invited to sit on the FQSSG. As the Fingerprint Society had joined the CSFS, it was thought that the CSFS should be formally represented on the specialist group.

Action 11: Secretariat to draft a letter to Martin Evison and Anya Hunt, requesting a nomination from CSFS to represent the fingerprint profession on the FQSSG.

4.3 Other changes highlighted included that within the composition section; the reference to HOB should be deleted. Members were invited to review

details of their own membership in the Terms of Reference and feedback any comments.

Action 12: FQSSG members to review the details of their own membership in the Terms of Reference and feedback to June Guinness.

5.0 Training of Fingerprint Experts: the College of Policing role

5.1 The FQSSG heard a presentation by the CoP on their plans for training of fingerprint experts. Going forward, the Cop would undertake less training itself and instead set training and learning standards for other organisations to meet. The CoP would be undertaking analysis to identify training needs based on police role profiles and related police role families, and use this work to specify flexible training modules. As part of this change, the CoP would cease all forensics training, except for digital forensics and the covert work. A training reference group had been set up from the National Police Chiefs' Council (NPCC) Forensic Performance and Standards Group, to meet in January 2017 and consider the future training requirements of police forces, given the changing role of the CoP.

5.2 The reference group had sent questionnaires to all police forces on their current progress with the Fingerprint Learning Programme and their anticipated demand and vacancies. Half the forces had replied and responses from the other forces were being followed up. It was apparent that there was a significant demand for training. The CoP provided an option for police forces to apply for licenses to provide fingerprint training to the CoP standards. The CoP was also making plans for continuing professional development to be carried out by fingerprints experts.

5.3 In future it was likely that there would be a range of new roles of fingerprint examiners in police forces. Fingerprint training could be modularised so that fingerprint experts needed only to study the particular fingerprint steps for which they were responsible. A particular requirement for fingerprint training would be to ensure that fingerprint experts understood the link between the chemical development process for fingerprints and the fingerprint comparison procedure.

6.0 Home Office Biometrics Programme update

6.1 An update was given on the progress which had been made on the fingerprints projects within the HOB. The Northrop Grumman contract for maintenance of the current IDENT1 AFIS had been extended, thus reducing the immediate pressure to purchase a new AFIS to replace it. New Information Technology (IT) hardware for fingerprints bureaux was being procured, including new desktop computer monitors and document scanners, to be installed in the fingerprint laboratories over a period of two years.

6.2 The FQSSG considered the procurement of the next generation fingerprint matching algorithms. Details of the Strategic Matcher project were provided, which would combine the IDENT1 AFIS and Immigration and

Asylum Biometric System (IABS) into a single common matching platform. The Prior Information Notice for the Matcher would be released early in 2017. The Request for Information would be issued in January 2017 and the Invitation to Tender was planned for April. The new Matcher was expected to be available by early 2018.

6.3 The Strategic Matcher would combine three algorithms, which were ten-print, latent mark and orthogonal. The orthogonal algorithm would use a different approach from the other two algorithms, by using the ridge flow to differentiate fingerprints. It would thus be able to re-rank fingerprint matches produced by the other two algorithms, and so provide an alternative view on the best matches.

6.4 In the past all fingerprint matching algorithms worked on their own proprietary standard of fingerprint encoding. Now they had the advantage of working with either an ISO standard or a National Institute of Standards and Technology standard.

6.5 The new Strategic Matcher would be validated using ground truth fingerprint data, and ground truth fingerprint data would also be needed to evaluate the potential alternative algorithms for purchase from suppliers. CAST had been collecting ground truth fingerprint data from police forces earlier, which could be included in this exercise.

Action 13: Richard Small to discuss with CAST whether their collection of ground truth data for fingerprints could be used to test the new Strategic Matcher.

6.6 Using the new algorithms, there would no longer be human intervention in parts of the fingerprint process, for example, it would no longer be necessary to identify which finger was used or to orient the mark. Overall the fingerprint business processes would change extensively.

6.7 Work to share fingerprints internationally under the Prüm agreement was proceeding. Extensive procedures to comply with data security and protection requirements set by a European Commission needed to be undertaken. There would then be a testing phase. The first fingerprints to be shared would be from the serious crime cache. Legislation was needed to permit the process, so a European Union (EU) framework decision would be incorporated into UK legislation.

6.8 The other Prüm countries had up to tens of thousands or millions of fingerprints in their databases, so the project had a potentially vast scope. However, each of the 27 countries taking part had its own quota for the number of prints and latent marks that could be searched.

6.9 Within the UK, police forces would routinely send prints and latent marks to the Metropolitan Police Service who would search them against European Databases. The list of prospective matches would then be returned to the Metropolitan Police Service.

7.0 FSR-C-127 – Fingermark Enhancement and Image Capture

7.1 The draft of the fingerprint enhancement and image capture standards document had been issued for consultation. The responses had been collated in a spreadsheet and reviewed by a technical sub group of the FQSSG. Thanks were expressed to Helen Bandey, Lisa Hall and Sean Doyle who had reviewed the many comments that had been submitted, and had determined the changes to be made. The document had been updated accordingly, and tracked with a full audit trail of the comments and resulting revisions. FQSSG members were asked whether they were content with the decisions listed in the spreadsheet, and reviewed the main updates.

7.2 Any remaining ambiguities in the text required correction. The section on Image Capture (10.2) had been rewritten to provide clarity, and the FQSSG were requested to provide their comments. Previously the document title had been fingerprint “enhancement” but in discussion it was agreed to change this to “visualisation”. The document needed to clarify that competence was required to assess the fingermark image produced by the fingerprint visualisation process and to make the correct decision on whether it was of sufficient quality to be submitted to the AFIS for fingerprint comparison and matching.

Action 14: FQSSG members to provide feedback to June Guinness on the amendments to the Fingerprints Visualisation document following the consultation, by 16th January 2017.

Action 15: The Fingerprints Visualisation document to be finalised, submitted to Forensic Science Regulator (FSR)’s Quality Standards Specialist Group (QSSG), and to FSR’s Forensic Science Advisory Council (FSAC), and signed off by Gary Pugh at the FQSSG March 2017 meeting for subsequent publication.

8.0 FSR-C-128 Fingerprint Comparison - Revisions

8.1 Revisions had been made to the Fingerprint Comparison Standard Appendix. Two annexes had been added to the document: a fingerprint explanatory note for court use and a process for external review of differences in opinion of a fingerprint match result. An introductory section had been added to align with the introduction to the fingerprint visualisation document and to link to this document.

8.2 The flowchart explaining the process for review panels on disputed opinions (figure 2 in annex 2) had been revised in line with earlier FQSSG discussion. The wording “guidance for those who provide assessment” needed reviewing. Also, input was required from the Crown Prosecution Service (CPS) on cases where a difference of opinion arose between fingerprint practitioners for fingerprint evidence (comparison, reporting and recording), as previous advice was that it should be disclosed. Therefore a

Streamlined Forensic Report (SFR) form could be inappropriate to use, and instead the full forensic evidence report might be required.

8.3 In particular sections of the draft the following points arose.

Paragraph 6.1.2: The minimum training requirement section for cognitive bias required review. This section specified suitable training in this topic, as an organisational responsibility.

Paragraph 9: Additional material on “technical records to be kept”, similar to that in the fingerprint enhancement document, needed to be added, including a new paragraph on assuring quality.

Paragraph 10.1.3: Under practitioner competence, a section referring to fingerprint comparison had been added. This covered finger-marks discarded as being of too low quality for comparison.

Paragraph 12.2.4: Under method validation, this section now explained that as AFIS was part of a whole end-to-end fingerprint procedure, it was the entire procedure that needed validation, and not specifically the IDENT1 AFIS algorithms. Under points “a” to “g” here, which explained the various individual steps used to process a fingerprint, the wording on validation to be undertaken might need to be referred to later in the document.

Action 16: June Guinness to circulate an updated fingerprints comparison document before Christmas. FQSSG members to provide feedback from the fingerprint community by 16th January 2017.

9.0 FSR-I-402 Fingerprint Terminology

9.1 Prior to the publication of the comparison and visualisation documents the terminology document required a review and new term added. Christophe Champod, Helen Bandey and Lisa Hall have agreed to assist June Guinness to update the document for the next meeting,

Action 17: Christophe Champod, Helen Bandey and Lisa Hall to provide feedback to June Guinness to update the fingerprint terminology document for the next meeting

10.0 Accreditation of the Current IDENT1 AFIS to ISO 17025 Standards

10.1 The Regulator had discussed with her Forensic Science Advisory Council and the Quality Standard Specialist Group whether the current AFIS, IDENT1 searching should be included in the scope of ISO 17025 accreditation for police forces, for fingerprint comparison. As all forces used IDENT1 this was noted as an issue which would affect all police forces. The FSR had set out her position on the related issues in a paper for FQSSG to note and comment upon.

10.2 The FQSSG members discussed some of these issues. The work required to validate IDENT1 would need to be repeated for the new AFIS in approximately two years time and IDENT1 had been in use for many years already. However, some work on the validation of IDENT1 which had been undertaken by the Scottish Police Forensic Services could be re-used by the other forces and allow risks to be managed. Validation of IDENT1 would require testing using ground truth fingerprint datasets. Eventually all of the police forces would be required to include AFIS in their accreditation scopes for fingerprints.

Action 18: Gary Pugh to discuss with Gill Tully how police forces should be informed of the need to include AFIS in their accreditation scope for fingerprints.

11.0 Update from NPCC Performance and Standards Group

11.1 An update was provided to FQSSG from the NPCC Performance and Standards Group. Chief Constable David Lewis had taken over as chair of this group and at its last meeting discussions had been held on the preparations that police forces had made to apply for fingerprint accreditation. This discussion included consideration of measurement uncertainties, and understanding of the various requirements for accreditation, and the timetable for the process of accreditation. Forces needed to undertake thorough preparations for accreditation before they made their applications to UKAS.

12.0 Update from UKAS

12.1 UKAS reported that it had successfully undergone a peer evaluation of its own processes by the European co-operation for Accreditation. An audit team with twelve members had visited UKAS for a week to witness all types of UKAS work, including assessments and calibrations. In advance of the audit, UKAS had successfully carried out an internal restructure. UKAS had also recruited an additional forensic manager. Consequently they were reviewing their forensic workload and transferring some projects between their managers.

13.0 AOB

13.1 FQSSG members raised two AOB items. Firstly, it was reported that the Scottish Police Authority had issued a press release to announce their successful achievement of fingerprint accreditation to ISO 17025 standards.

13.2 Secondly, a new version of the Criminal Practice Directions¹ had been issued which included additional sections. One section specified that reference should be made to a Code of Experts. This referred to the Academy of Experts Code of Practice for Experts and not the FSR's Forensic Science

¹ <https://www.judiciary.gov.uk/publications/criminal-practice-directions-2015-consolidated-with-amendment-no-2/>

Providers: Codes of Practice and Conduct. Further discussions were to be progressed by the Regulator to harmonise Criminal Justice System procedures in various areas with FSR standards requirements.

14.0 Dates of future FQSSG Meetings

14.1 The dates of the next two FQSSG meetings had been set as 23 March 2017 at West Yorkshire Police, and 29 June 2017 at Greater Manchester Police.

Annex A

Present:

Gary Pugh, Chair	Director of Forensic Services, Metropolitan Police Service
Helen Bandey	Centre for Applied Science and Technology
Duncan Brown	College of Policing
Graham Camm	Home Office Biometrics Programme
June Guinness	Scientific Lead, Forensic Science Regulation Unit, Home Office
Gary Holcroft	Scottish Police Authority
Katherine Monnery	United Kingdom Accreditation Service
Richard Small	West Midlands Police
Mike Taylor	Science Secretariat, Home Office

Apologies:

Apologies were received from:

Karen Georgiou	Bedfordshire Police
Mark Bishop	Crown Prosecution Service
Iain Borthwick	Greater Manchester Police, Forensic Services Branch
Christophe Champod	Lausanne University
Neil Denison	West Yorkshire Police
Lisa Hall	Metropolitan Police Service