



Fingerprint Quality Standards Specialist Group (FQSSG)

Note of the meeting held on 17 October 2019 at Regulator's Office, 5 St Phillips Place, Birmingham, B3 2PW.

1.0 Welcome, Introduction and Apologies

1.1 The Chair welcomed all to the meeting. A full list of the attendee organisations and apologies is provided at Annex A.

2.0 Minutes of the last FQSSG meeting on 04 June 2019

2.1 The previous FQSSG minutes were approved as an accurate reflection of the discussion held, subject to minor amendments, and the secretariat was asked to publish them.

Action 1: The Secretariat to amend and publish the minutes of the FQSSG meeting held on 04 June 2019 on GOV.UK.

3.a Actions and Matters Arising

3.1 The following matters arising from the previous FQSSG meeting were discussed:

3.2 Action 2: Links to tutorials on likelihood ratio to be shared with David Goodwin. This action had been completed. Links had also been provided for the interpretation specialists sub-group. FSRU would circulate the links to any other members who requested them.

Action 2: FSRU to share the account details for members to access the links with KM and GH.

3.3 Action 3: Develop terms of reference and membership person specification for 'Evaluation and Interpretation' guidance (specifically for fingerprints and including probabilistic as appropriate) sub group. This action was in progress and would be discussed as agenda item 3b.

3.4 Action 4: Practitioner participation nominations using person specification to the sub group to be sought. This action would depend on the outcome of action 3.

- 3.5 Action 6: Sub working group to be agreed and convened.
This action was on hold pending the outcome of action 3 and 4.
- 3.6 Action 8: State of play of proficiency test project; a statement of user needs (SUN) has been submitted to Home Office Science Commissioning Hub on behalf of the Regulator.
The FSRU had received a response to review for the SUN which outlined the potential scope of delivery by Dstl. The FSRU was of the opinion that the proposed scope of work required amendments to meet the original project objectives. The FRSU also enquired whether the project could be incorporated into the scope of activities currently being undertaken by Dstl. It was agreed for further discussions to take place between the FSRU, Home Office Science Commissioning Hub, and Dstl to refine the proposed scope of work. As part of wider discussions, the Regulator mentioned that the Forensic Information Databases Service (FINDS) was looking at setting up a way to commission proficiency tests more widely and therefore should be engaged in relation to the project.

Action 3: The Regulator and FSRU to discuss proficiency testing further with Dstl and then engage with FINDS colleagues.

- 3.7 Action 9: Michelle Painter to be contacted regarding Dstl published powders guidance to determine appropriate level for CSI fingerprint related validation preparedness for ISO 17020 accreditation.
This action was complete. It was noted that there were ongoing discussions between Dstl and Transforming Forensics (TF) relating to fingerprint powders, including batch testing guidance, that may be relevant to CSI fingerprint validation activities. In broader discussions, the Dstl representative highlighted a recent workshop on validation / verification guidelines for various fingermark visualisation scenarios which Dstl had led at a recent European Network of Forensic Science Institutes (ENFSI) meeting. The group discussed the potential of re-running the workshop as one scenario included taking processes to scene. However, it was felt that in the current iteration it would not specifically benefit the CSI community in the preparedness for ISO 17020 accreditation as much of the validation work had been completed. Nonetheless Dstl, the FSR and FSRU would discuss the potential of developing a suitable fingerprint enhancement workshop although this would most likely be based around laboratory-based activities rather than at scene as this was the focus of the ENFSI workshop.

Action 4: Dstl to discuss with the Regulator and FSRU the development of a suitable fingerprint enhancement workshop.

- 3.8 Action 13 Sign off and agreement for output descriptors from the Transforming Forensics (TF) 'opportunities' list to be added under existing research themes; with the addition of new combined biometric modalities into the R&D document prior to finalisation and publication.
This item would be discussed under agenda item 5.
- 3.9 Action 14 Seek feedback from UKAS and the fingerprint enhancement lab group (FELG) on FSR-C-127 the enhancement document.

This action was in progress.

- 3.10 Action 15 Subgroup formation to progress review and update FSR-C-127 using feedback and crime scene considerations.
This action was in progress.
- 3.11 Action 16 In relation to the requirements for imaging and transmission contained in FSR-C-127, information on validation from the CSI expert network to be sought. This action was in progress. The Regulator and the representative from the CSI expert network had discussed this and there was concern that this activity could fall between ISO 17020 and 17025. It was discussed that the use of transmission would be clearer once all forces were utilising the same platform with roll out beginning in mid-2020. In the interim period the group agreed that forces would need to include transmission of images in their scope for ISO 17020 accreditation and specify the locations from which transmissions would occur. The view was expressed that if transmission was not already in scope, it was unlikely that it would be included for next year. It was also anticipated that in longer term this would fall within the scope of TF.

Action 5: The representative from the CSI Expert Network to raise the issue of image transmission with the Network and will investigate if any police forces were including imaging and transmission from crime scenes within their scope.

- 3.12 Action 17 Feedback from bureaux to be obtained on FSR-C-128 the comparison document. This action was ongoing.
- 3.13 Action 18 Subgroup formation to progress review and update FSR-C-128 using feedback. This action was ongoing.
- 3.14 Action 19 FQSSG updated Terms of Reference to be finalised and published. This item would be discussed under agenda item 4.
- 3.15 Action 20 All FQSSG members to confirm who the regular representative is from their organisation, any carbon copy recipients and to provide appropriate updated contact details. The majority of members had confirmed the contact information. The secretariat would follow up with members who have not yet confirmed their details.

3.b Sub-Group Terms of Reference

- 3.16 The members discussed the draft terms of reference (ToR) developed for the Fingerprint Interpretation Specialist Group (FISG) that had been circulated to the members before the meeting. Members were asked for their comments on the content of the document, the remit and the proposed stakeholders.
- 3.17 The Regulator highlighted the ToR reflected the aim of the group to provide guidance on opinion evidence including the value of evidence, source and activity level interpretations. It was noted that in section C of the ToR, fingerprint

interpretation quality standard should read fingerprint interpretation guidance. The representative from the Metropolitan Police Service informed the group of a paper being written by the Alan Turing Institute on interpretation and that discussions were ongoing with the author in respect of activity level.

- 3.18 It was acknowledged that this guidance document would have to be very much in line with the broader Regulator's document on evaluative interpretation which was currently in draft form.

Action 6: FSRU to amend "Fingerprint interpretation quality standard" to "fingerprint interpretation guidance."

- 3.19 The members discussed the area of expertise and person specification within the FISG. The areas of expertise that were proposed to draw members from were; academia, fingerprint profession, fingerprint examination, and a Scottish Police Authority representative with significant knowledge in the fields of friction ridge examination. Members were asked if the areas of expertise covered all areas within the fingerprint community. A member suggested a representative from Transforming Forensics could be included, this was agreed if the TF individual was a fingerprint practitioner however a representative from the FSRU considered that the Transforming Forensics perspective would be best suited to a fingerprint examination sub group. Inclusion of a practitioner from a small and medium enterprises (SME) was proposed. The area of expertise and person specifications were agreed by the group.

Action 7: The FSRU to invite representatives to sit on the new FISG.

4.0 Terms of reference update- addition of General Data Protection Regulation (GDPR) Reference

- 4.1 There had been minor changes to the terms of reference, and this included additional information concerning GDPR. Members were recently asked to provide their email contact details. It was explained that when email communications were sent to members their email addresses would be visible to members of the group only. This would allow exchange and discussion with members of the group. The new terms of reference were agreed by the members.

Action 8: Secretariat to publish the updated FQSSG Terms of Reference.

5.0 Work plan

5.1 a. R&D collation

5.2 The members discussed the fingerprint research and development considerations document. The aim of the document was to publicise areas of potentially relevant research which would be beneficial to the underpinning and development of fingerprint examination for the wider Criminal Justice System. The document had been reviewed by the Forensic Science Advisory Council (FSAC). The members agreed that the document was ready for publication. It was agreed that the final version should be published by the end of November 2019.

5.3 b. Work plan – additions

5.4 The members were presented with an updated version of the FQSSG work plan. The FSR-C-126, -127, and -128 standards would be reviewed and updated by a working group by October 2020. Members agreed that this date was achievable.

5.5 It was confirmed that the Friction ridge detail (fingerprint) search algorithm validation guidance had been published. The validation of the HOB supplier was in progress and should be completed by spring/summer 2020. The fingerprint project was being progressed by Transforming Forensics (TF) and the group would receive regular updates from TF on the progress of this work.

Action 9: TF to update the stage/progress of the fingerprint project with routine updates.

5.6 It was confirmed for the Evaluative Interpretation guidance project a working group would be formed to progress this work by the end of the year. A date for this work to be completed had not yet been decided as it would need to be aligned with the interpretation standard document. A member queried when the interpretation standard would be published. It was confirmed a draft would be available for a small group to review within the next few weeks. It was anticipated it would be circulated to the broader group for review shortly afterwards.

5.7 Bureau tools was discussed by the group. Bureau tools referred to the TF end-to-end digital fingerprint comparison application. A member asked about how forces provided with the live application should verify the system before use. The representative from UKAS highlighted that those forces who had IDENT1 in their scope of accreditation would need to carry out verification and receive a visit from UKAS before the new system would be accredited. For the forces not involved in the parallel run, scalable work was being carried out by Home Office Biometrics (HOB), but this would require forces to have their own relevant Ground Truth Data sets. The members discussed IDENT1 accreditation for police forces. The Regulator confirmed she had not yet set a deadline for police forces to achieve IDENT1 accreditation, however if there was no evidence of bureaux adding this to their scope for accreditation then a deadline would be set.

- 5.8 A member mentioned the national ten print service and asked if there were any further updates on this. It was agreed that the whole community would benefit from such a service, but that no-one wanted to own it. It was suggested that FINDS or FCN might take ownership. Members agreed this timeline service could predict when forces may add IDENT1 to their accreditation scope and whether this would be part of a routine visit or as an extension to scope. It was confirmed that the Home Office (FINDS) team could provide an update on the progress of this work.

Action 10: FSRU to contact FINDS for an action plan for a national ten prints service.

- 5.9 The members discussed the CSI engagement section of the work plan. It was agreed the validation of fingerprint powders could be removed and routine updates of the visualisation manual should be added to the work plan. It was agreed the bureau tools section in the workplan should be updated to CSI bureau tools and workflow and include imaging, transmission and receipt.

Action 11: FSRU to update the work plan for review at next meeting.

6. Accreditation update

- 6.1 UKAS had observed variation across forces in the application of the term complex marks defined in FSR-C-128. This had resulted in variable approaches to assigning marks to follow a complex marks process and inconsistency in the types of marks described as complex. It was acknowledged that the determination of 'complexity' was subjective. The definition in the next version of the document would be updated to reflect complex comparisons and challenging marks.
- 6.2 The UKAS representative requested a review of the use of the terms complexity and variance and processes for selecting which marks would follow the complex mark process.

Action 12: Forces to provide the FSRU with their complex mark process for review of the definition of complex marks in FSR-C-128 by the sub group.

- 6.3 The representative from the MPS mentioned that their validation work showed significant variation between experts in the types of marks described as complex. They found a quality grading was more consistent across experts. The Regulator questioned whether the rate of disagreement was greater with challenging marks and whether this was captured in validation exercises.
- 6.4 The Regulator reminded the group that any definition of marks established during validation must be maintained through practice so any change to the definition of complex marks may require additional validation exercises. The representative from UKAS confirmed that they expected to see ongoing validation studies after accreditation to reflect learning.

- 6.5 The group discussed gathering learning from validation studies and the Regulator suggested that work from multiple forces could be grouped and published as a scientific paper. It was suggested that the Fingerprint Expert Network could lead on this and coordinate workshops to share learning. It was also suggested that Transforming Forensics could organise a fingerprint conference.

Action 13: Fingerprint Strategic Network representative to liaise with the Chair of the Fingerprint Expert Network to ensure future FEN meetings consider future fingerprint validation work and to share and publish results of any future validation studies.

Action 14: NPCC representative to raise the possibility of a fingerprint conference with Transforming Forensics.

- 6.6 The representative from UKAS provided an update on accreditation; three fingerprint bureaux remain to be accredited; nine pre-assessments had been carried out of Crime Scene Investigation Units, with a further ten planned by the end of January. Four units were scheduled for assessment pre-Christmas.
- 6.7 The group highlighted the key requirements of a good quality manager, well supported by the senior management and provided with ongoing training, for successful progression towards Crime Scene Investigation accreditation.
- 6.8 The representative from UKAS raised the issue of dates for visits being repeatedly moved back by forces. They requested that Transforming Forensics offer support to forces who had applied for a UKAS assessment to meet their visit date.

7. Quality/Scientific/Development Updates

- 7.1 The Forensic Science Regulation Unit informed the members that the Fingerprint Enhancement Laboratory (FEL) group ran a successful conference and they would next meet on the 1st of November. The FEL group had put forward their consumable requirements to the national procurement group. The FEL group were reviewing the requirements for membership of the group.
- 7.2 The representative from Transforming Forensics (TF) gave an update on the testing of technology used to transfer images of marks and associated contextual images captured at scenes. The system was developed with subject matter experts. TF had identified single points of contact for information on training and validation, and the Home Office Biometrics programme and had identified regional representatives. Initial testing was run from the end of September to the beginning of October, and TF was working through feedback. The next phase was to test the comparator tool in November/December. TF were aiming to roll out to the test force in January 2020 and were working with the Home Office Biometrics Programme to import ten prints into the system.

- 7.3 The representative from UKAS asked about accreditation of the system. The group was informed that the representative from the Metropolitan Police Service was leading on validation of the system and that once rolled out to forces there would be a need to validate it in-house as part of an end-to-end process.
- 7.4 The security of data in the system was discussed and the group were informed that an independent assessment had been carried out.
- 7.5 The group discussed the need for changes to Standard Operating Procedures as a result of implementation of the new technology as well as the need for training, competency testing, and validation.
- 7.6 The representative from Dstl apprised the group of their current research work and highlights included; studies utilising Foster+Freeman RECOVER Latent Fingerprint Technology process to develop marks on fired cartridge casings and knives. These studies were supporting a police force who were looking to bring the process into their scope of accreditation. A special edition newsletter focussing on porous processes including a new indandione process instruction and a new physical developer formulation was going through the final review and would be issued by the end of November. Dstl both presented and led a visualisation workshop at the first joint meeting of the European Network of Forensic Institutes' (ENFSI) European Fingerprint Working Group (EFPWG) and the European Network of Forensic Handwriting Experts (ENFHEX). Dstl was supporting TF on drafting guidelines for the batch testing fingerprint powders. Finally, Dstl was continuing to support research activities being undertaken by several UK universities.
- 7.7 The representative from Dstl updated the group on the proposed plan to update the fingermark visualisation manual. There was discussion around more frequent updating of the manual and the Dstl representative acknowledged this request as a requirement to be included into the proposed update plan for the manual which would be submitted to the Home Office Science Commissioning Hub.
- 7.8 The representative from the HOB Programme provided an update to the group on the Strategic Matcher. The matcher was in systems test, next steps were a performance test, including scalability tests, then user testing and the system was planned to go live at the end of March 2020. Initial tests were successful with approximately 30% new matches found.
- 7.9 Validation of the Strategic Matcher was discussed, the team had created a validation library which also included the IT validation and initial testing results, and this would be made available through the knowledge hub. The representative from HOB described plans to create a separate cache of data within the matcher of around 250,000 prints that would be available for validation and testing. In order to carry out in-house validation users would have to feed in their own datasets to this test data.

- 7.10 The representative from UKAS asked how realistic the test data set would be. The group were informed that the marks used for the validation could not be from crime scenes, data sets should be comprised of ten prints and would not be searched against the live database. Each force would decide on the prints to upload however the HOB was issuing guidance and suggesting a best approach. This could require additional validation if it represented a change to the current standard operating procedure. How the prints were uploaded was also discussed and users should consider comparing submission of auto-encoded marks to submission of marks encoded by a practitioner.
- 7.11 The group discussed the expectations for validation of the Strategic Matcher. This would be required to demonstrate that the Strategic Matcher performed as well as, or better than, the previous matching system. A member reported initial tests had shown the number of matches against prints in a Ground Truth Database (GTD) was dependant on the quality of marks in the GTD and this may result in forces getting different match rates with the same system. It was also noted that this represented an opportunity to consider practitioner competence.
- 7.12 An update was provided on the open competition to run the fingerprint databases which was won by Leidos and progress had been good.

8. Professional updates

- 8.1 A representative from the FSRU gave an update from the European Network of Forensic Science Institutes, including that the fingerprint best practise manual was being updated. Dstl was heavily involved in this and the group agreed that it would be useful to follow this.
- 8.2 The College of Policing fingerprint learning platform was on hold as a result of staff secondment. A member informed the group that forces had started delivering their own training and the representative from the FSRU expressed concern that this could lead to divergence.
- 8.3 The update from the Chartered Society of Forensic Sciences (CSFS) was to draw members attention to their upcoming conference.

9. Any Other Business

- 9.1 The representative from the FSRU informed the members that the unit had received a quality failure referral resulting from an erroneous exclusion identified during dip sampling. The Regulator would publish a lesson learned in November.

9.2 A member asked if the group could pull research work together for publication. The FSRU recalled that the CSFS had promoted a platform for undergraduate projects so other researchers could look at what had been done, it was not clear if that was available for use.

Action 15: The Independent Fingerprint Expert to find out at about the research projects database from the CSFS.

Annex A

Organisation Representatives Present:

Scottish Police Authority (chair)
The Forensic Science Regulator
Defence Science Technology Laboratory (Dstl)
East Midlands Special Operations Unit (EMSOU)
Greater Manchester Police
Home Office - Biometric Programme (HOB)
Home Office – FSRU
Home Office - Science Secretariat
Independent Fingerprint Expert
Metropolitan Police Service
Transforming Forensics (TF)
UK Accreditation Service
University of Lausanne
West Midlands Police
West Yorkshire Police

Apologies:

Crown Prosecution Service
The Chartered Society of Forensic Sciences
College of Policing