Forensic Science Regulator
Overseeing Quality

DNA Specialist Group

Minutes of the twenty-eighth meeting held on 06 November 2018, at 5, St Philip's Place, Colmore Row, Birmingham.

1. Welcome and introductions

1.1 The Chair welcomed all to the meeting. See Annex A for a list of representatives present.

2. Minutes from previous meeting and previous actions

2.1 No issues regarding the previous meeting minutes raised.

2.2 Actions from the previous meeting discussed. The only outstanding action was 'FSRU to carry out a review of emerging genetic technologies and their applications and distribute this to the DNASG'. An update on this was given by the FSRU; this is in progress and information is been collated and the action should be completed by the start of the new year.

3. Standards – Mixtures Interpretation

3.1 a. Mixture interpretation publication feedback

3.1.1 The Forensic Science Regulator (FSR) sent a letter to CC James Vaughn detailing the implications of the implementation of the mixture interpretation guidance document. Issue 2 of the Mixture interpretation guidance document (FSR-G-222) has been published detailing clarification on qualitative evaluation of DNA mixtures and additional comments on the impact of the ISFG's newly published document "DNA commission of the international society for forensic genetics: Assessing the value of forensic biological evidence – Guidelines highlighting the importance of propositions Part I: evaluation of DNA profiling comparisons given (sub) source propositions" (P. Gill et al, *Forensic Science International: Genetics,* 36(2018) 189-202).

3.1.2 One point raised in this feedback was whether the FSR-G-222 document and the ISFG's document differ in their aim to give guidelines about 'major contributors' in mixtures and the 'major/minor' approach; the response was that the guidance in FSR-G-222 considers a wider range of less clear-cut situations.

3.1.3 The representative from Cellmark Forensic Services stated that the amendments in issue 2 of FSR-G-222 seems to have resolved the question of current trials where cases were reported using qualitative evaluation before these guidelines and have not received any issues from court. The FSR stated that the next issue of the Codes may stipulate what should be done when a new or updated standard or guidance document is published, in

relation to cases completed prior to publication of the new guidance or standards but where this evidence has not yet been given in court.

3.1.4 The representative from Cellmark Forensic Services stated that some defence scientists had applied the guidance in FSR-G-222 to Y-STR cases and made challenges based on this guidance. It was clarified by the FSR that the guidance is for autosomal DNA but challenging the evaluation of Y-STR results is certainly acceptable.

3.1.5 The group discussed the need for including key journal papers relevant to the case in a reference section in witness statements. The purpose of including such references is to show the range of opinions in the area in question, as specified in the Criminal Procedure Rules (2015) sections 19.4 (b) and (f). The possibility of each forensic unit having a QMS controlled bibliography and then this bibliography being referenced in statements was discussed but thought not to be sufficient.

Action 1: To provide examples of lists of key papers on specific topics suitable for meeting CPR rules on disclosure of published papers relied on when providing expert opinion.

3.2 **b. Evidence interpretation standard**

3.2.1 An appendix to the Codes will be produced on the interpretation of evidence. The interpretation of evidence expert group met in October 2017, and a draft document has now been produced based on likelihood ratio methodology. This draft is currently being reviewed by group members. It is expected that it may be a long process to finalise the document, but the document will be passed to the DNA specialist group for feedback. The document may be ready to be passed to the DNA SG in approximately 6 months.

4. AFSP mixtures proficiency test (NIST mixtures study)

4.1 A presentation was given on the new mixture evaluation collaborative exercise, which used the samples and case information from the FSR study conducted in 2014.

4.2 When the results were compared with those from the 2014 study the outputs showed less variation between the Forensic Science Providers and within each Forensic Unit. The approaches also showed improved access to of validated software and an increase in the range of cases that could now be formally evaluated. The study and findings will be written up for publication.

4.3 The use of phrases such as ‘greater than 1 in a billion’ and ‘about one billion’ and how these are perceived by the courts and Jury was discussed. Additionally, it was asked, should a review of the verbal scale take place? That is, the words used for the various strengths of support. The FSR confirmed that this currently sits with the Interpretation of evidence expert group but it is something this group could look into. It was noted that any changes to the AFSP agreed verbal scale could raise issues with the likelihood data table used by Police in SFR 1 reports.

4.4 Other issues raised were the use of Likelihood Ratios rather than match probabilities for single source DNA results – some Forensic Units are making this change. Also, whether actual calculated Likelihood Ratios could be provided now that the software was more sophisticated. However, this would potentially lead to variation in the LR figures quoted for the same DNA result where FSPs use different software for the calculations and

would require further validation of the assumptions of independence between loci in the multiplexes. The Regulator does not currently view a change to quoting precise LRs rather than “over 1 billion” to be a priority There may be further consideration of such issues as part of the work on the interpretation standard.

Action 2: Undertake an impact assessment of the proposed change of match probability to likelihood ratio.

5. Work plan updates

5.1 a. Relationship testing. The writing group meeting was held on 21st September 2018 with the next meeting planned for 5th February 2019. The guidance document sections have been allocated for writing with a due date of 18th January 2019. The Terms of Reference and Work plan was discussed and accepted.

5.2 b. Y-STR. The writing group meeting was held on 25th September 2018 and the guidance document sections were allocated and have been written. The FSRU now has the task of compiling the document and will be passed to the specialist group for review. The writing group is next due to meet to review the draft document on 6th December 2018. The Terms of Reference and Work plan was discussed and accepted.

5.3 c. DNA mixture proficiency working group. This relates to the guidance document numbered FSR-G-224. The draft sections have been written and the FSRU now has the task of compiling the document. The document will be passed to this specialist group for review.

5.4 d. Profile interpretation. This relates to the guidance document numbered FSR-G-213. The draft sections have been written and the FSRU now has the task of compiling the document. The document will be passed to this specialist group for review.

5.5 e. DNA Codes of Practice. This document (FSR-C-108) will be updated once the new guidance documents have been updated and published. The aim is to have a draft for the next DNA specialist group meeting in May 2019.

5.6 f. QA/QC Rapid DNA workshop. The workshop was held on 26th October 2018 and attended by many representatives, such as individuals from Police forces and Forensic Providers plus manufacturing specialists from ANDE and Thermo-Fisher. An overview document was produced from the workshop and circulated. Next steps were discussed, and it was agreed to produce a skeleton document and for this to be reviewed by the specialist group to determine if a guidance or standard is required.

Action 3: Skeleton document produced for a guidance/standard on RAPID DNA tests. To disseminate to the SG to aid decision making on next steps.

5.7 g. PACE swabs network. A meeting is being held in Birmingham on the 13th December.

6. Stakeholder updates

6.1 FINDS. Delivery remains on track for the September 2019 go live of Strategic DNA (SDNA). This will replace the current National DNA Database system with a new system, which will, in addition to meeting existing service levels, provide wider service improvements including increased automation; business information management; consolidated collections, storage and management; and the capability to support future enhancements, such as different DNA technologies. Further to the last working group meeting, approval has been sought and given from both the FIND Strategy Board and the Biometrics and Forensic Ethics Group (BFEG) for the retention of all loci within a PCR Chemistry that is submitted for loading to the MPDD. The anticipated go live date for this will be the beginning of Jan.19. The policy for the Contamination DNA Database, formerly known as the Unsourced Contamination DNA database has been completely rewritten. The policy is going for approval and sign off at the next Contamination Elimination DNA Database (CED) board in November. Developments for inclusion of n-2 checks into NMR are scheduled for stage 1.2 of HOB (Home Office Biometric Programme).

6.2 UKAS. A new chief executive has been appointed. Next year all ISO 17025 assessments will have a transmission assessment to take into account the updates to ISO 17025, more information is available on the UKAS webs site.

7. Professional and scientific updates

7.1 a. AFSP DNA specialist group. The group met on 5th November 2018. The group discussed; the mixture study presented to this group (section 4 of this document), the involvement of DSTL, the use of likelihood ratios and the DNA futures group.

7.2 b. CSFS. An overview of the recent November 2018 conference was given. It was stated that The CSFS are always happy to canvas for views and disseminate information on behalf of the FSR specialist groups and are keen to be led by the needs of groups such as the DNASG in planning events and workshops. The society is coming to the end of a project developing a generic quality management system (GQMS) for use by any forensic business units seeking UKAS accreditation for their work. Currently the society is running a pilot for practitioners seeking Chartered forensic practitioner status (ChFP). There have been no applications from DNA experts at this stage. Also nearing completion (end of Nov 2018) is a proof of concept study for case review work under 17020. This study will evaluate whether or not 17020 is the correct standard for case review, which includes DNA defence examinations, and whether the CSFS-GQMS is appropriate.

7.3 c. ENFSI. ENFSI is now a legal entity, which will help with many aspects including transparency. A reminder that members can access papers via the web site. There is a DNA task group who are tasked with updating existing guidance documents and ‘best practice’ documents. ENFSSI are also looking into mobile technologies, including with regard to DNA. The next meeting is 7th – 9th May in Madrid.

7.4 d. ISFG. The next meeting is 9th – 14th September in Prague. Be aware that ISFG do run summer workshops, have short term fellowships and can give travel bursaries.

7.5 e. Body fluid forum. The practical aspect of the ‘Examining the transfer of male DNA in simulated social contact and sexual contact to assist in the evaluation of results in casework scenarios’ has now been completed within all the AFSP member laboratories.

As a result of the experiments, each laboratory have 4 pairs of knickers to examine, the minitapes from which will be sent to Eurofins for autosomal and Y-STR profiling.

8. AOB

8.1 The Cellmark Forensic Services representative asked if anyone else has encountered Police forces asking how many loci were present when loading a partial profile, in order to determine how good a match they might get. No one else had to their knowledge but will investigate.

8.2 Medical Forensics standard and guidance documents are to go out for consultation soon and they are heavily linked to DNA.

8.3 MPS representative questioned the need for their presence on the Relationship testing sub group. Agreed to keep them informed and involved in reviewing the drafts but not necessary for them to attend the meetings.

9. Date of the next meeting

9.1 The date of the next meeting was confirmed as the 14th of May 2019 in Birmingham.

Annex A

Organisation Representatives Present:

Principal Forensic Services - Chair
Forensic Science Regulator
Forensic Science Regulation Unit
Forensic Science Regulation Unit
FINDS
Kings College London
FSI
Eurofins Forensic Services
Key Forensic Services
FSNI
SPA
UKAS
Cellmark Forensic Services
Chartered Society of Forensic Sciences
Royal Statistical Society
MPS

Apologies:

CPS
Key Forensic Services
AFSP Body Fluid Forum