

RTI #3386 – STRmix Miscoding Error

Background

Forensic DNA Analysis within Forensic and Scientific Services (FSS) implemented a computer program known as STRmix™ in December 2012. This program was developed as a software solution to standardise DNA profile interpretations across Australia and New Zealand.

In December 2014, the developers of the software reported a minor miscode within the software being used by FSS. This miscode was found to affect the Likelihood Ratio (LR) that is generated when Reference (person) sample DNA profiles are compared to DNA profiles obtained from crime scene exhibits. The specific category of crime scene DNA profiles affected were three-person mixed DNA profiles, where one of the contributors to the mixed DNA profile was an assumed contributor i.e. a DNA contribution from that person would not be unexpected given the sample type.

In response to the identification of this minor miscode, FSS took immediate steps to advise the Queensland Police Service (QPS), review cases that may be affected by the minor miscode and re-issue statements as necessary with relevant communication to the Office of the Director of Public Prosecutions (DPP).

The minor miscode in the software was rectified by the developers and there have been no further issues identified with the updated version of the software.

Results

23 cases resulted in a change to the likelihood ratio, and new statements were issued to QPS and DPP. These cases are outlined as follows:

Case Number	Date first item received by FSS for analysis
QP1201321830	02.01.13
QP1201360267	02.01.13
QP1300204654	22.02.13
QP1300309794	02.05.13
QP1300430443	18.04.13
QP1300600988	27.05.13
QP1300601632	23.05.13
QP1300684484	11.06.13
QP1300788502	08.07.13
QP1300969188	16.09.13
QP1301082714	27.09.13
QP1301490498	02.12.13
QP1301560240	10.01.14
QP1400067945	20.01.14
QP1400085167	20.01.14
QP1400343756	14.03.14
QP1400405135	01.04.14
QP1400417887	31.03.14
QP1400621195	12.05.14
QP1400634392	14.05.14
QP1400769701	13.06.14
QP1400775077	13.06.14
QP1401171526	01.09.14

37 cases **did not** result in a change to the likelihood ratio that was reported in the statement, and therefore no re-issue was required. These cases are outlined as follows:

Case Number	Date first item received by FSS for analysis
QP1201295421	20.12.12
QP1201335449	09.01.13
QP1201357828	09.01.13
QP1300043157	08.03.13
QP1300056135	15.01.13
QP1300129720	04.02.13
QP1300148265	15.02.13
QP1300198202	08.03.13
QP1300290484	11.03.13
QP1300682868	12.06.13
QP1300735651	26.06.13
QP1300736362	25.06.13
QP1300868379	02.08.13
QP1300895789	01.08.13
QP1300910738	05.08.13
QP1300985972	04.09.13
QP1301051546	09.09.13
QP1301088243	12.09.13
QP1301089745	27.09.13
QP1301326551	28.10.13
QP1301354856	04.11.13
QP1301513310	09.12.13
QP1301516763	17.01.14
QP1301562415	18.12.13
QP1301573899	17.01.14
QP1301575931	06.01.14
QP1400120841	31.01.14
QP1400154852	04.02.14
QP1400239130	28.02.14
QP1400554953	12.05.14
QP1400616588	12.05.14
QP1400664162	19.05.14
QP1400765622	18.06.14
QP1400797558	16.07.14
QP1400801200	23.06.14
QP1400934561	18.07.14
QP1401032353	20.08.14

Data Extracted

- Information regarding case numbers was extracted from existing documents
- Information regarding the dates that items were received was extracted from the FSS records. This relates only to the first item received relating to each case. Further items may have been received on subsequent dates.