
Information technology — Biometric data interchange formats —

Part 14: DNA data

AMENDMENT 1: Conformance testing and clarification of defects

*Technologies de l'information — Formats d'échange de données
biométriques —*

Partie 14: Données ADN

AMENDEMENT 1: Essais de conformité et clarification des défauts





COPYRIGHT PROTECTED DOCUMENT

© ISO/IEC 2016, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document is ISO/IEC JTC 1, *Information technology*, SC 37, *Biometrics*.

Information technology — Biometric data interchange formats — Part 14 - DNA data –

Amendment 1 : Conformance testing and clarification of defects

Page v, Introduction

Add the following text to the "Introduction":

"The definition of conformance testing in Annex A is distinct from the ISO/IEC 29109, which addressed conformance testing only of the first edition of ISO/IEC 19794. This annex addresses the ISO/IEC 19794-14:2013 revision conformance testing.

Additionally, this part of the ISO/IEC 19794 supports XML encoding, to support a spectrum of user requirement. With XML, this part will meet the requirements of modern IT architectures. Annex B specifies the schema that XML encoded DNA data records must conform to, and Annex E provides an example of a valid XML encoded finger image record."

Page 1, Clause 1, Scope

Add the following text to the "Scope":

"This part of ISO/IEC 19794 also specifies elements of conformance testing methodology, test assertions, and test procedures as applicable to this part of ISO/IEC 19794. It establishes test assertions pertaining to the structure of the DNA data format (Type A Level 1 as defined in ISO/IEC 19794-1:2011/Amdt. 1:2013), test assertions pertaining to internal consistency of the types of values that may be contained within each field (Type A Level 2 as defined in ISO/IEC 19794-1:2011/Amdt. 1:2013).

The conformance testing methodology specified in this part of ISO/IEC 19794 does not establish:

- tests of other characteristics of biometric products or other types of testing of biometric products (e.g. acceptance, performance, robustness, security),
- tests of conformance of systems that do not produce or consume data records not conforming to the requirements of this part of ISO/IEC 19794.

The conformance testing level 1 and level 2 are defined in this Amendment, and the conformance testing level 3 will be defined in ISO/IEC 19794-14/Amdt 2."

Page 1, Clause 2, Conformance

Add the following text to the "Conformance" Clause:

"Biometric data interchange format conformance tests conform to this part of ISO/IEC 19794 if they satisfy all of the normative requirements set forth in Clause 6.

The description of the conformance testing methodology for ISO/IEC 19794-14 DNA data should reflect the general characteristics of a BDIR structure as specified in the ISO/IEC 19794-1/Amdt. 1. However, the implementations of ISO/IEC 19794-14 DNA data may include

examples in conformance testing with biometric data record (BDB) embedded in a patron format, e.g. CBEFF in this part of ISO/IEC 19794.

The included implementations do not necessarily need to conform to all possible aspects of this part of ISO/IEC 19794, but only to those requirements supported by an Implementation Conformance Statement (ICS) in accordance with Clause A.3 of ISO/IEC 19794-1:2011 Amdt. 1:2013 and Table A.1 of Annex A of this part of ISO/IEC 19794."

Page 4, subclause 6.3, 5th paragraph

Replace:

"The CBEFF_BDB_format_type shall be specified by the CBEFF BDB format type identifier assigned by ISO/IEC JTC1/SC37 to this DNA record format. This value is the sixteen bit value 0x0008."

With:

"The CBEFF_BDB_format_type shall be specified by the CBEFF BDB format type identifier assigned by ISO/IEC JTC1/SC37 to this DNA record format. This value is the sixteen bit value 0x0020."

Page 13, 6.4.3.2.1, "STR DNA Profile"

Add the following text to the "STR DNA Profile" subclause:

"Because "allele call number #1" contain float number only, in case of the locus marker is "Amelogenin", the value of "allele call number #1" shall be "0" instead of "X" or "1" instead of "Y"."

Page 19, Annex A

Replace Annex A with the following one.

Annex A (normative)

Conformance Testing Methodology

The testing methodology specified in Clauses A.1, A.2 and A.3 of ISO/IEC 19794-1/Amdt. 1 shall apply. The content of the tables below is based on the conformance testing methodology outlined in 19794-1/Amdt. 1 and shall only be used in the context of that testing methodology.

A.1. Table of requirements in the base standard for conformance testing level 1 and 2

The normative requirements of ISO/IEC 19794-14 Biometric Data Interchange Format – Part 14 DNA Data are listed in Table A.1. The supplier of the IUT shall explain which optional components of the standard are supported and the testing laboratory shall note the results of the test.

This table, A.1, may extend over multiple pages.

Table A.1 – Table of Requirements of the Base Standard (19794-14)

Requirement ID	Reference in Base Standard	Requirement Summary	Level	Status	IUT Support	Supported Range	Test Result	XML Applicability
R-1	6.3 BDB	<p>The biometric data record represented using the DNA record format may be embedded in the biometric data block (BDB) of the CBEFF patron format compliant with ISO/IEC 19785-1:2004. If a CBEFF header is used, the following specifications apply:</p> <p>The CBEFF patron format requests to specify both CBEFF_BDB_format_owner and CBEFF_BDB_format_type as mandatory elements in the CBEFF Header.</p> <p>The CBEFF_BDB_format_owner shall be specified by the CBEFF biometric organization identifier issued by the CBEFF registration authority to ISO/IEC JTC1/SC37. This value is the sixteen bit value 0x0101.</p> <p>The CBEFF_BDB_format_type shall be specified by the CBEFF BDB format type identifier assigned by ISO/IEC JTC1/SC37 to this DNA record format. This value is the sixteen bit value 0x0008</p>	2	O-x				No
R-2	6.3 BDIR	The structure of a BDIR consisting of one mandatory General Header and one or more Representation parts	2	M				Yes
R-3	6.4.1.1	The format identifier field shall be the string "DNA"	2	M				Yes
R-4	6.4.1.2	The version field shall be the Major version 3 and Minor version 0	2	M				Yes
R-5	6.4.1.3	The communication direction field shall contain a string listed in Table 2 of this standard.	2	M				Yes
R-6	6.4.1.4	The NationalityCode of sending party field shall contain a valid ISO 3166-2 code entry.	2	M				Yes
R-7	6.4.1.4	The Name of Entity of sending party field shall contain a valid ISO 3166-2 code entry.	1	M				Yes
R-8	6.4.1.4	The Name of Person of sending party field shall contain a valid ISO 3166-2 code entry.	1	M				Yes
R-9	6.4.1.5	The NationalityCode of receiving party field shall contain a valid ISO 3166-2 code entry.	2	M				Yes
R-10	6.4.1.5	The Name of Entity of receiving party field shall contain a valid ISO 3166-2 code entry.	1	M				Yes
R-11	6.4.1.5	The Name of Person of receiving party field shall contain a valid ISO 3166-2 code entry.	1	M				Yes
R-12	6.4.1.6	The entity type field shall be in accordance with clause 6.4.1.6	2	M				Yes
R-13	6.4.1.7	The date and time of data exchange field shall be in accordance with 19794-1 AMD2	2	M				Yes

R-14	6.4.2.1	The sample collection date field shall be in accordance with 19794-1 AMD2	2	M				Yes
R-15	6.4.2.2.	The sample category field shall be in accordance with Table 5.	2	M				Yes
R-16	6.4.2.3.	The sample cellular type field shall be in accordance with Table 6.	2	M				Yes
R-17	6.4.2.4	The sample typing technology field shall be in accordance with Table 7.	2	M				Yes
R-18	6.4.2.5	The specimen contributor field shall be in accordance with Table 8.	2	M				Yes
R-19	6.4.2.6	The sample collection method field shall be in string	1	M				Yes
R-20	6.4.2.7	The sample collection location field shall be in string	1	M				Yes
R-21	6.4.2.8	The sample collection Geo-Location fields shall be in accordance with Table 9 and WGS 84.	2	M				Yes
R-22	6.4.2.9	The pedigree tree field shall be in accordance with clause 6.4.2.9	2	M				Yes
R-23	6.4.3.1.1	The date and time field shall be in accordance with 19794-1 AMD2	2	M				Yes
R-24	6.4.3.1.2	The batch ID field shall be in string	1	M				Yes
R-25	6.4.3.1.3	The dna profile ID field shall be in string	1	M				Yes
R-26	6.4.3.1.4	The kit ID field shall be in string	1	M				Yes
R-27	6.4.3.1.5	The lab certification field shall be in accordance with clause 6.4.3.1.5 and contain values from Table 15.	2	M				Yes
R-28	6.4.3.1.6	The scope of accreditation field shall be in accordance with clause 6.4.3.1.6 and contain values from table 17.	2	M				Yes
R-29	6.4.3.1.7	The request type field shall be in accordance with clause 6.4.3.1.7 and contain values from Table 19.	2	M				Yes
R-30	6.4.3.1.7	The request type field shall be mandatory when the communication direction is "R" (request), otherwise optional.	2	M				Yes
R-31	6.4.3.1.8	The result field shall be in accordance with clause 6.4.3.1.8 and contain values from Table 21.	2	M				Yes
R-32	6.4.3.1.8	The result type field shall be mandatory when the communication direction is "A" (Answer), otherwise optional.	2	M				Yes
R-33	6.4.3.1.9	The error message field shall be in string	1	M				
R-34	6.4.3.1.10	The supplementary message field shall be in string	1	M				
R-35	6.4.3.2.1	The STR DNA profile field shall be in accordance with clause 6.4.3.2.1.	2	M				Yes
R-36	6.4.3.2.1	The STR DNA profile field shall mandatory when the sample typing technology is "STR", otherwise optional. See Table 22.	2	M				Yes

R-37	6.4.3.2.2	The Y-STR DNA profile field shall be in accordance with clause 6.4.3.2.2	2	M				Yes
R-38	6.4.3.2.2	The Y-STR DNA profile field shall mandatory when the sample typing technology is "Y-STR", otherwise optional. See Table 22.	2	M				Yes
R-39	6.4.3.2.3	The mitochondrial DNA data field shall be in accordance with clause 6.4.3.2.3	2	M				Yes
R-40	6.4.3.2.3	The mitochondrial DNA data type field shall mandatory when the sample typing technology is "mtDNA", otherwise optional. See Table 22.	2	M				Yes
R-41	6.4.3.2.4	The electropherogram data field shall be in accordance with clause 6.4.3.2.4	2	M				Yes
R-42	6.4.3.2.4	The electropherogram data field shall mandatory when the sample typing technology is "Electropherogram", otherwise optional. See Table 22.	2	M				Yes
R-43	6.4.3.2.5	The user defined DNA Data field shall be in accordance with table 42.	2	M				Yes

Note. For R-1 requirement, 'O-x' means that CBEFF conformance testing is out of scope of this document.

A.2. Table Conformance Test Assertions

The XML encoded conformance test assertions are listed in the order in that the corresponding fields are required to appear, if present, in a conforming record.

This table, A.1, may extend over multiple pages.

Table A.2 – XML Encoded Conformance Test Assertions

Test No.	Section	Requirement ID	Level	Field Name	Operator	Operand	Test Note	Status	IUT Support	Supported Range	Test Result
1	6 DNA format specification	R-2	2	Entire field	EQ	BDIR has one general header and at least one representation					
2	6.4.1 DNA Record General Header	R-3	2	Format Identifier	EQ	"DNA"					
3	6.4.1 DNA Record General Header	R-4	2	Version – Major version	EQ	3					

4	6.4.1 DNA Record General Header	R-4	2	Version – Minor version	EQ	0					
5	6.4.1 DNA Record General Header	R-5	2	Communication Direction	EQ	"Request" or "Answer"					
6	6.4.1 DNA Record General Header	R-6	2	Sending Party : Nationality Code	EQ	Nationality code defined in ISO 3166-2					
7	6.4.1 DNA Record General Header	R-7	1	Sending Party : Name of Entity	GTE	Length ≥ 0					
8	6.4.1 DNA Record General Header	R-8	1	Sending Party : Name of Person	GTE	Length ≥ 0					
9	6.4.1 DNA Record General Header	R-9	2	Receiving Party : Nationality Code	EQ	Nationality code defined in ISO 3166-2					
10	6.4.1 DNA Record General Header	R-10	1	Receiving Party : Name of Entity	GTE	Length ≥ 0					
11	6.4.1 DNA Record General Header	R-11	1	Receiving Party : Name of Person	GTE	Length ≥ 0					
12	6.4.1 DNA Record General Header	R-12	2	Entity Type	EQ	"G", "GM", "GR", "I", "IM", "IR", "O", "OM", "OR", "U", "UM" or "UR"					
13	6.4.1 DNA Record General Header	R-13	2	Date and Time of Data Processing : Year	EQ	1 to 65534					
14	6.4.1 DNA Record General Header	R-13	2	Date and Time of Data Processing: Month	EQ	1 to 12					
15	6.4.1 DNA Record General Header	R-13	2	Date and Time of Data Processing : Day	EQ	1 to 31					
16	6.4.1 DNA Record General Header	R-13	2	Date and Time of Data Processing : Hour	EQ	0 to 23					
17	6.4.1 DNA Record General Header	R-13	2	Date and Time of Data Processing : Minute	EQ	0 to 59					
18	6.4.1 DNA Record General Header	R-13	2	Date and Time of Data Processing : Second	EQ	0 to 59					

19	6.4.1 DNA Record General Header	R-13	2	Date and Time of Data Processing : Millisecond	EQ	0 to 999					
20	6.4.2 Representation Metadata	R-14	2	Sample Collection Date : Year	EQ	1 to 65534					
21	6.4.2 Representation Metadata	R-14	2	Sample Collection Date : Month	EQ	1 to 12					
22	6.4.2 Representation Metadata	R-14	2	Sample Collection Date : Day	EQ	1 to 31					
23	6.4.2 Representation Metadata	R-14	2	Sample Collection Date : Hour	EQ	0 to 23					
24	6.4.2 Representation Metadata	R-14	2	Sample Collection Date : Minute	EQ	0 to 59					
25	6.4.2 Representation Metadata	R-14	2	Sample Collection Date : Second	EQ	0 to 59					
26	6.4.2 Representation Metadata	R-14	2	Sample Collection Date : Millisecond	EQ	0 to 999					

27	6.4.2 Representation Metadata	R-15	2	Sample Category	EQ	"Arrestee", "Claimed Biological Child", "Claimed Biological Father", "Claimed Biological Mother", "Claimed Biological Sibling", "Claimed Biological Spouse", "Actual Biological Child", "Actual Biological Father", "Actual Biological Mother", "Actual Biological Sibling", "Actual Biological Spouse", "Adoptive Biological Child", "Adoptive Biological Father", "Adoptive Biological Mother", "Adoptive Biological Sibling", "Adoptive Biological Spouse", "Convicted Offender", "Forensic, Unknown", "Insurgent", "Known Suspected Terrorist", "Maternal Relative", "Missing Person", "Paternal Relative", "Suspect, Known", "Unidentified Living", "Unidentified Dead", "Victim, Known", "Detainee", "Other" or "Unspecified"					
----	-------------------------------	------	---	-----------------	----	--	--	--	--	--	--

28	6.4.2 Representation Metadata	R-16	2	Sample Cellular Type	EQ	"Blood", "Bone", "Commingle Biological Material", "Hair", "Saliva", "Semen", "Skin", "Sweat/Fingerprint", "Tissue", "Tooth (including Pulp)", "Other", "Unknown" or "Unspecified"					
29	6.4.2 Representation Metadata	R-17	2	Sample Typing Technology	EQ	"STR", "Y-STR", "mtDNA", "Electropherogram" or "User Defined Typing"					
30	6.4.2 Representation Metadata	R-18	2	Specimen Contributor	EQ	"Known" or "Unknown"					
31	6.4.2 Representation Metadata	R-19	1	Sample Collection Method	GTE	Length ≥ 0					
32	6.4.2 Representation Metadata	R-20	1	Sample Collection Location	GTE	Length ≥ 0					
33	6.4.2 Representation Metadata	R-21	2	Sample Collection Geo-Location : Latitude	EQ	$-90.0 \leq \text{latitude} \leq +90.0$					
34	6.4.2 Representation Metadata	R-21	2	Sample Collection Geo-Location : Longitude	EQ	$-180.0 \leq \text{longitude} \leq +180.0$					
35	6.4.2 Representation Metadata	R-22	2	Pedigree Tree : Pedigree Member ID	GT	0					
36	6.4.2 Representation Metadata	R-22	2	Pedigree Tree : Specimen ID	LTE	Length ≤ 24					
37	6.4.2 Representation Metadata	R-22	2	Pedigree Tree : Mother ID	GT	0					
38	6.4.2 Representation Metadata	R-22	2	Pedigree Tree : Father ID	GT	0					

39	6.4.2 Representation Metadata	R-22	2	Pedigree Tree : Specimen ID	EQ	"Known" or "Unknown"					
40	6.4.2 Representation Metadata	R-22	2	Pedigree Tree : Specimen ID	EQ	"Male" or "Female"					
41	6.4.3.1 DNA Typing Data	R-23	2	Date and Time of Analysis : Year	EQ	1 to 65534					
42	6.4.3.1 DNA Typing Data	R-23	2	Date and Time of Analysis : Month	EQ	1 to 12					
43	6.4.3.1 DNA Typing Data	R-23	2	Date and Time of Analysis : Day	EQ	1 to 31					
44	6.4.3.1 DNA Typing Data	R-23	2	Date and Time of Analysis : Hour	EQ	0 to 23					
45	6.4.3.1 DNA Typing Data	R-23	2	Date and Time of Analysis : Minute	EQ	0 to 59					
46	6.4.3.1 DNA Typing Data	R-23	2	Date and Time of Analysis : Second	EQ	0 to 59					
47	6.4.3.1 DNA Typing Data	R-23	2	Date and Time of Analysis : Millisecond	EQ	0 to 999					
48	6.4.3.1 DNA Typing Data	R-24	1	Batch ID	GTE	Length ≥ 0					
49	6.4.3.1 DNA Typing Data	R-25	1	DNA Profile ID	GTE	Length ≥ 0					
50	6.4.3.1 DNA Typing Data	R-26	1	Kit ID	GTE	Length ≥ 0					
51	6.4.3.1 DNA Typing Data	R-27	2	Lab Certification	EQ	"No validation", "ISO/IEC 17025 (KOLAS) certification", "GLP validation", "AABB certification", "ISO/ILAC Guild 19 accreditation", "Unknown" or "Unspecified"					
52	6.4.3.1 DNA Typing Data	R-28	2	Scope of Accreditation	EQ	"Nuclear", "Mitochondrial", "Database", "Other" or "Unspecified"					

53	6.4.3.1 DNA Typing Data	R-29	2	Request Type	EQ	"Data submission", "Data submission and Search", "Search", "User Defined"					
54	6.4.3.1 DNA Typing Data	R-30	2	(Request Type field == Mandatory)	C	Communication direction, "Request"					
55	6.4.3.1 DNA Typing Data	R-31	2	Result	EQ	"Unable to Process", "No Hit", "Hit User Defined", "User Defined"					
56	6.4.3.1 DNA Typing Data	R-32	2	(Result field == Mandatory)	C	Communication direction, "answer"					
57	6.4.3.1 DNA Typing Data	R-33	1	Error Message	GTE	Length $\geq$ 0					
58	6.4.3.1 DNA Typing Data	R-34	1	Supplementary Message	GTE	Length $\geq$ 0					
59	6.4.3.2 DNA Typing	R-35	2	STR DNA Profile : Locus information : Locus header : Name of Locus marker	EQ	Name of Locus marker in Annex D					
60	6.4.3.2 DNA Typing	R-35	2	STR DNA Profile : Locus information : Locus header : Status	EQ	"Normal", "Silent allele", "Not determined", or "Not analyzed"					
61	6.4.3.2 DNA Typing	R-35	2	STR DNA Profile : Locus information : Allele call : Operator	EQ	"Equal", "Lower-limit", "Upper-limit" or "Range"					
62	6.4.3.2 DNA Typing	R-35	1	STR DNA Profile : Locus information : Allele call : Allele call number #1							
63	6.4.3.2 DNA Typing	R-35	2	STR DNA Profile : Locus information : Allele call : Allele call number #2	C	STR DNA Profile : Locus information : Allele call : Operator, "Range"					

64	6.4.3.2 DNA Typing	R-36	2	(STR DNA Profile field == Mandatory)	C	Sample Typing Technology, "STR"					
65	6.4.3.2 DNA Typing	R-37	2	Y-STR DNA Profile : Locus information : Locus header : Name of Locus marker	EQ	Name of Locus marker in Annex D					
66	6.4.3.2 DNA Typing	R-37	2	Y-STR DNA Profile : Locus information : Locus header : Status	EQ	Normal", "Silent allele", "Not determined", or "Not analyzed"					
67	6.4.3.2 DNA Typing	R-37	2	Y-STR DNA Profile : Locus information : Locus header : Operator	EQ	"Equal", "Lower-limit", "Upper-limit" or "Range"					
68	6.4.3.2 DNA Typing	R-37	1	Y-STR DNA Profile : Locus information : Allele call : Allele call number #1							
69	6.4.3.2 DNA Typing	R-37	2	Y-STR DNA Profile : Locus information : Allele call : Allele call number #2	C	STR DNA Profile : Locus information : Allele call : Operator, "Range"					
70	6.4.3.2 DNA Typing	R-38	2	(Y-STR DNA Profile field == Mandatory)	C	Sample Typing Technology, "Y-STR"					
71	6.4.3.2 DNA Typing	R-39	2	mtDNA Data : Mito control region1	EQ	string consists only the character listed in Table 28					
72	6.4.3.2 DNA Typing	R-39	2	mtDNA Data : Mito control region2	EQ	string consists only the character listed in Table 28					
73	6.4.3.2 DNA Typing	R-39	1	mtDNA Data : Mito DNA Quality 1							
74	6.4.3.2 DNA Typing	R-39	1	mtDNA Data : Mito DNA Quality 2							
75	6.4.3.2 DNA Typing	R-40	2	(mtDNA data field == Mandatory)	C	Sample Typing Technology "mtDNA"					

76	6.4.3.2 DNA Typing	R-41	1	Electropherogram data : Electropherogram Data : Time and Fluorescence Strength Data : Run Name							
77	6.4.3.2 DNA Typing	R-41	1	Electropherogram data : Electropherogram Data : Time and Fluorescence Strength Data : Sample File Name							
78	6.4.3.2 DNA Typing	R-41	1	Electropherogram data : Electropherogram Data : Time and Fluorescence Strength Data : Electropherogram Dye Data: Dye name							
79	6.4.3.2 DNA Typing	R-41	1	Electropherogram data : Electropherogram Data : Time and Fluorescence Strength Data : Electropherogram Time Data: Time in the run							
80	6.4.3.2 DNA Typing	R-41	1	Electropherogram data : Electropherogram Data : Time and Fluorescence Strength Data : Electropherogram Time Data: Fluorescence strenth							
81	6.4.3.2 DNA Typing	R-41	1	Electropherogram data : Electropherogram Data : Time and Base Pair Correspondence Data : Correspondence Data : Run Name							
82	6.4.3.2 DNA Typing	R-41	1	Electropherogram data : Electropherogram Data : Time and Base Pair Correspondence Data : Correspondence Data : Sample File Name							

83	6.4.3.2 DNA Typing	R-41	1	Electropherogram data : Electropherogram Data : Time and Base Pair Correspondence Data : Correspondence Data : Time in the run							
84	6.4.3.2 DNA Typing	R-41	1	Electropherogram data : Electropherogram Data : Time and Base Pair Correspondence Data : Correspondence Data : Base Pair Size							
85	6.4.3.2 DNA Typing	R-41	1	Electropherogram data : Electropherogram Data : Panel Data : Primer Set Name							
86	6.4.3.2 DNA Typing	R-41	2	Electropherogram data : Electropherogram Data : Panel Data : Panel Allele Data : Locus Name	EQ	Name of Locus marker in Annex D					
87	6.4.3.2 DNA Typing	R-41	1	Electropherogram data : Electropherogram Data : Panel Data : Panel Allele Data : Dye Name							
88	6.4.3.2 DNA Typing	R-41	1	Electropherogram data : Electropherogram Data : Panel Data : Panel Allele Data : Minimum Allele Size							
89	6.4.3.2 DNA Typing	R-41	1	Electropherogram data : Electropherogram Data : Panel Data : Panel Allele Data : Maximum Allele Size							
90	6.4.3.2 DNA Typing	R-41	2	Electropherogram data : Electropherogram Data : Panel Data : Panel Allele Data : Noise Ratio	EQ	0.0 to 1.0					
91	6.4.3.2 DNA Typing	R-41	1	Electropherogram data : Electropherogram Data : Bin Data : Primer Set Name							

92	6.4.3.2 DNA Typing	R-41	2	Electropherogram data : Electropherogram Data : Bin Data : Bin Locus Data : Locus Name	EQ	Name of Locus marker in Annex D					
93	6.4.3.2 DNA Typing	R-41	2	Electropherogram data : Electropherogram Data : Bin Data : Bin Locus Data : Bin Call Data : Allele Call			See Test 54 to 56.				
94	6.4.3.2 DNA Typing	R-41	1	Electropherogram data : Electropherogram Data : Bin Data : Bin Locus Data : Bin Call Data : Average Base Pair Size							
95	6.4.3.2 DNA Typing	R-41	1	Electropherogram data : Electropherogram Data : Bin Data : Bin Locus Data : Bin Call Data : Minus Deviation Base Pair Size							
96	6.4.3.2 DNA Typing	R-41	1	Electropherogram data : Electropherogram Data : Bin Data : Bin Locus Data : Bin Call Data : Plus Deviation Base Pair Size							
97	6.4.3.2 DNA Typing	R-41	2	Electropherogram data : Reference Electropherogram Data : Time and Fluorescence Strength Data			See Test 69 to 73.				
98	6.4.3.2 DNA Typing	R-41	2	Electropherogram data : Electropherogram Data Mitochondrial Sequence Data : Time and Fluorescence Strength Data			See Test 69 to 73.				

99	6.4.3.2 DNA Typing	R-41	1	Electropherogram data : Electropherogram Data Mitochondrial Sequence Data : Dye assignment for Base : Dye Name							
100	6.4.3.2 DNA Typing	R-41	2	Electropherogram data : Electropherogram Data Mitochondrial Sequence Data : Dye assignment for Base : Base type	EQ	string consists only the character listed in Table 28					
101	6.4.3.2 DNA Typing	R-42	2	(Electropherogram data field == Mandatory)	C	Sample Typing Technology "Electropherogram"					
102	6.4.3.2 DNA Typing	R-43	2	User Defined DNA Data : TypeCode	GTE	Length ≥ 0					
103	6.4.3.2 DNA Typing	R-43	2	User Defined DNA Data : Data	EQ	Base 64 Encoding					

Note: Operator 'C' means the following: If the value of the field that corresponds to the first operand is equal to the value of the second operand, this field is mandatory. For example, when operator 'C' is set and the operands are "Communication direction" and "Answer", this is interpreted as follows. If the value of "Communication direction" field is the same as "Answer", this field is mandatory.

A.3. Sample XML

```

<?xml version="1.0" encoding="UTF-8"?>
<Dna xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns="http://standards.iso.org/iso-iec/19794/-14/ed-1"
  xmlns:cmn="http://standards.iso.org/iso-iec/19794/-1/ed-2/amd/2"
  xmlns:dna="http://standards.iso.org/iso-iec/19794/-14/ed-1"
  xsi:noNamespaceSchemaLocation="19794-14_ed1_amd1.xsd"
  cmn:SchemaVersion="1.0">
  <dna:GeneralHeader>
    <dna:FormatIdentifier>Dna</dna:FormatIdentifier>
    <dna:Version>
      <cmn:Major>3</cmn:Major>
      <cmn:Minor>0</cmn:Minor>
    </dna:Version>
    <dna:CommunicationDirection>Request</dna:CommunicationDirection>
    <dna:SendingParty>
      <dna:NationalityCode>KR</dna:NationalityCode>
      <dna:EntityName>National Forensic Service</dna:EntityName>
      <dna:PersonName>Alice</dna:PersonName>
    </dna:SendingParty>
    <dna:ReceivingParty>
      <dna:NationalityCode>DE</dna:NationalityCode>
      <dna:EntityName>BKA</dna:EntityName>
      <dna:PersonName>Bob</dna:PersonName>
    </dna:ReceivingParty>
    <dna:EntityType>GR</dna:EntityType>
    <dna:DateAndTimeOfDataProcessing>2014-01-
30T09:30:10Z</dna:DateAndTimeOfDataProcessing>
  </dna:GeneralHeader>
  <dna:Representations>
    <dna:Representation>
      <dna:RepresentationHeader>
        <dna:SampleCollectionDate>2013-08-01T09:00:00Z</dna:SampleCollectionDate>
        <dna:SampleCategory>Arrestee</dna:SampleCategory>
        <dna:SampleCellularType>Hair</dna:SampleCellularType>
        <dna:SampleTypingTechnology>Str</dna:SampleTypingTechnology>
        <dna:SpecimenContributor>Known</dna:SpecimenContributor>
        <dna:SampleCollectionMethod>Picked up from crime
scene</dna:SampleCollectionMethod>
        <dna:SampleCollectionLocation>Liberty Enlightening the
World</dna:SampleCollectionLocation>
        <dna:SampleCollectionGeoLocation>
          <dna:Latitude>40.688904</dna:Latitude>
          <dna:Longitude>-74.044595</dna:Longitude>
        </dna:SampleCollectionGeoLocation>
        <dna:PedigreeTrees>
          <dna:PedigreeTree>
            <dna:Pedigree>
              <dna:PedigreeId>Pedigree1</dna:PedigreeId>
              <dna:PedigreeMembers>

```

```

<dna:PedigreeMember>
  <dna:PedigreeMemberId>1</dna:PedigreeMemberId>
  <dna:SpecimenId>19794-14-1-1</dna:SpecimenId>
  <dna:MotherId>4</dna:MotherId>
  <dna:FatherId>5</dna:FatherId>
  <dna:PedigreeMemberStatus>Known</dna:PedigreeMemberStatus>
  <dna:Gender>Female</dna:Gender>
</dna:PedigreeMember>
<dna:PedigreeMember>
  <dna:PedigreeMemberId>2</dna:PedigreeMemberId>
  <dna:SpecimenId>19794-14-1-2</dna:SpecimenId>
  <dna:MotherId>0</dna:MotherId>
  <dna:FatherId>0</dna:FatherId>
  <dna:PedigreeMemberStatus>Known</dna:PedigreeMemberStatus>
  <dna:Gender>Male</dna:Gender>
</dna:PedigreeMember>
<dna:PedigreeMember>
  <dna:PedigreeMemberId>3</dna:PedigreeMemberId>
  <dna:SpecimenId>19794-14-1-3</dna:SpecimenId>
  <dna:MotherId>1</dna:MotherId>
  <dna:FatherId>2</dna:FatherId>
  <dna:PedigreeMemberStatus>Known</dna:PedigreeMemberStatus>
  <dna:Gender>Male</dna:Gender>
</dna:PedigreeMember>
<dna:PedigreeMember>
  <dna:PedigreeMemberId>4</dna:PedigreeMemberId>
  <dna:SpecimenId>19794-14-1-4</dna:SpecimenId>
  <dna:MotherId>0</dna:MotherId>
  <dna:FatherId>0</dna:FatherId>
  <dna:PedigreeMemberStatus>Known</dna:PedigreeMemberStatus>
  <dna:Gender>Female</dna:Gender>
</dna:PedigreeMember>
<dna:PedigreeMember>
  <dna:PedigreeMemberId>5</dna:PedigreeMemberId>
  <dna:SpecimenId>19794-14-1-5</dna:SpecimenId>
  <dna:MotherId>6</dna:MotherId>
  <dna:FatherId>7</dna:FatherId>
  <dna:PedigreeMemberStatus>Known</dna:PedigreeMemberStatus>
  <dna:Gender>Male</dna:Gender>
</dna:PedigreeMember>
<dna:PedigreeMember>
  <dna:PedigreeMemberId>6</dna:PedigreeMemberId>
  <dna:SpecimenId>19794-14-1-6</dna:SpecimenId>
  <dna:MotherId>0</dna:MotherId>
  <dna:FatherId>0</dna:FatherId>
  <dna:PedigreeMemberStatus>Known</dna:PedigreeMemberStatus>
  <dna:Gender>Female</dna:Gender>
</dna:PedigreeMember>
<dna:PedigreeMember>
  <dna:PedigreeMemberId>7</dna:PedigreeMemberId>
  <dna:SpecimenId></dna:SpecimenId>
  <dna:MotherId>0</dna:MotherId>

```

```

        <dna:FatherId>0</dna:FatherId>
        <dna:PedigreeMemberStatus>Unknown</dna:PedigreeMemberStatus>
        <dna:Gender>Male</dna:Gender>
      </dna:PedigreeMember>
    </dna:PedigreeMembers>
  </dna:Pedigree>
</dna:PedigreeTree>
</dna:PedigreeTrees>
</dna:RepresentationHeader>
<dna:DnaTypingData>
  <dna:DateAndTimeOfAnalysis>2014-01-
28T15:31:15Z</dna:DateAndTimeOfAnalysis>
  <dna:BatchId>BATCH-0001</dna:BatchId>
  <dna:DnaProfileId>19794-14-1-1</dna:DnaProfileId>
  <dna:KitId>PowerPlex 1.1</dna:KitId>
  <dna:LabCertifications>
    <dna:LabCertification>Isolec17025Certification</dna:LabCertification>
  </dna:LabCertifications>
  <dna:ScopeOfAccreditations>
    <dna:ScopeOfAccreditation>Nuclear</dna:ScopeOfAccreditation>
  </dna:ScopeOfAccreditations>
  <dna:Request>
    <dna:RequestValue>DataSubmission</dna:RequestValue>
  </dna:Request>
  <dna:Result>
    <dna:ResultValue>UserDefined</dna:ResultValue>
    <dna:UserDefined>
      <dna:TypeCode></dna:TypeCode>
      <dna:Data></dna:Data>
    </dna:UserDefined>
  </dna:Result>
  <dna:ErrorMessage></dna:ErrorMessage>
  <dna:SupplementaryMessage></dna:SupplementaryMessage>
</dna:DnaTypingData>
<dna:DnaTyping>
  <dna:StrDnaType>
    <dna:LocusInformation>
      <dna:LocusHeader>
        <dna:NameOfLocusMarker>CSF1P0</dna:NameOfLocusMarker>
        <dna:Status>Normal</dna:Status>
      </dna:LocusHeader>
      <dna:AlleleCall>
        <dna:Operator>Equal</dna:Operator>
        <dna:AlleleCallNumber1>11</dna:AlleleCallNumber1>
      </dna:AlleleCall>
      <dna:AlleleCall>
        <dna:Operator>Equal</dna:Operator>
        <dna:AlleleCallNumber1>12</dna:AlleleCallNumber1>
      </dna:AlleleCall>
    </dna:LocusInformation>
    <dna:LocusInformation>
      <dna:LocusHeader>

```

```

    <dna:NameOfLocusMarker>D13S317</dna:NameOfLocusMarker>
    <dna:Status>Normal</dna:Status>
  </dna:LocusHeader>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber1>8</dna:AlleleCallNumber1>
  </dna:AlleleCall>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber1>12</dna:AlleleCallNumber1>
  </dna:AlleleCall>
</dna:LocusInformation>
<dna:LocusInformation>
  <dna:LocusHeader>
    <dna:NameOfLocusMarker>D16S539</dna:NameOfLocusMarker>
    <dna:Status>Normal</dna:Status>
  </dna:LocusHeader>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber1>12</dna:AlleleCallNumber1>
  </dna:AlleleCall>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber1>13</dna:AlleleCallNumber1>
  </dna:AlleleCall>
</dna:LocusInformation>
<dna:LocusInformation>
  <dna:LocusHeader>
    <dna:NameOfLocusMarker>D18S51</dna:NameOfLocusMarker>
    <dna:Status>Normal</dna:Status>
  </dna:LocusHeader>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber1>12</dna:AlleleCallNumber1>
  </dna:AlleleCall>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber1>13</dna:AlleleCallNumber1>
  </dna:AlleleCall>
</dna:LocusInformation>
<dna:LocusInformation>
  <dna:LocusHeader>
    <dna:NameOfLocusMarker>D21S11</dna:NameOfLocusMarker>
    <dna:Status>Normal</dna:Status>
  </dna:LocusHeader>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber1>28</dna:AlleleCallNumber1>
  </dna:AlleleCall>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber1>29</dna:AlleleCallNumber1>

```

```

    </dna:AlleleCall>
  </dna:LocusInformation>
<dna:LocusInformation>
  <dna:LocusHeader>
    <dna:NameOfLocusMarker>D3S1358</dna:NameOfLocusMarker>
    <dna:Status>Normal</dna:Status>
  </dna:LocusHeader>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber1>15</dna:AlleleCallNumber1>
  </dna:AlleleCall>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber1>16</dna:AlleleCallNumber1>
  </dna:AlleleCall>
</dna:LocusInformation>
<dna:LocusInformation>
  <dna:LocusHeader>
    <dna:NameOfLocusMarker>D5S818</dna:NameOfLocusMarker>
    <dna:Status>Normal</dna:Status>
  </dna:LocusHeader>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber1>9</dna:AlleleCallNumber1>
  </dna:AlleleCall>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber1>12</dna:AlleleCallNumber1>
  </dna:AlleleCall>
</dna:LocusInformation>
<dna:LocusInformation>
  <dna:LocusHeader>
    <dna:NameOfLocusMarker>D7S820</dna:NameOfLocusMarker>
    <dna:Status>Normal</dna:Status>
  </dna:LocusHeader>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber1>10</dna:AlleleCallNumber1>
  </dna:AlleleCall>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber1>12</dna:AlleleCallNumber1>
  </dna:AlleleCall>
</dna:LocusInformation>
<dna:LocusInformation>
  <dna:LocusHeader>
    <dna:NameOfLocusMarker>D8S1179</dna:NameOfLocusMarker>
    <dna:Status>Normal</dna:Status>
  </dna:LocusHeader>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber1>13</dna:AlleleCallNumber1>

```

```

</dna:AlleleCall>
<dna:AlleleCall>
  <dna:Operator>Equal</dna:Operator>
  <dna:AlleleCallNumber1>15</dna:AlleleCallNumber1>
</dna:AlleleCall>
</dna:LocusInformation>
<dna:LocusInformation>
  <dna:LocusHeader>
    <dna:NameOfLocusMarker>FGA</dna:NameOfLocusMarker>
    <dna:Status>Normal</dna:Status>
  </dna:LocusHeader>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber1>21</dna:AlleleCallNumber1>
  </dna:AlleleCall>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber1>26</dna:AlleleCallNumber1>
  </dna:AlleleCall>
</dna:LocusInformation>
<dna:LocusInformation>
  <dna:LocusHeader>
    <dna:NameOfLocusMarker>TH01</dna:NameOfLocusMarker>
    <dna:Status>Normal</dna:Status>
  </dna:LocusHeader>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber1>7</dna:AlleleCallNumber1>
  </dna:AlleleCall>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber1>9.3</dna:AlleleCallNumber1>
  </dna:AlleleCall>
</dna:LocusInformation>
<dna:LocusInformation>
  <dna:LocusHeader>
    <dna:NameOfLocusMarker>TPOX</dna:NameOfLocusMarker>
    <dna:Status>Normal</dna:Status>
  </dna:LocusHeader>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber1>9</dna:AlleleCallNumber1>
  </dna:AlleleCall>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber1>11</dna:AlleleCallNumber1>
  </dna:AlleleCall>
</dna:LocusInformation>
<dna:LocusInformation>
  <dna:LocusHeader>
    <dna:NameOfLocusMarker>vWA</dna:NameOfLocusMarker>
    <dna:Status>Normal</dna:Status>

```

```

</dna:LocusHeader>
<dna:AlleleCall>
  <dna:Operator>Equal</dna:Operator>
  <dna:AlleleCallNumber1>16</dna:AlleleCallNumber1>
</dna:AlleleCall>
<dna:AlleleCall>
  <dna:Operator>Equal</dna:Operator>
  <dna:AlleleCallNumber1>17</dna:AlleleCallNumber1>
</dna:AlleleCall>
</dna:LocusInformation>
<dna:LocusInformation>
  <dna:LocusHeader>
    <dna:NameOfLocusMarker>Amelogenin</dna:NameOfLocusMarker>
    <dna:Status>Normal</dna:Status>
  </dna:LocusHeader>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber1>0</dna:AlleleCallNumber1>
  </dna:AlleleCall>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber1>0</dna:AlleleCallNumber1>
  </dna:AlleleCall>
</dna:LocusInformation>
</dna:StrDnaType>
</dna:DnaTyping>
</dna:Representation>
<!--
Second Representation
-->
<dna:Representation>
  <dna:RepresentationHeader>
    <dna:SampleCollectionDate>2013-08-02T13:00:00</dna:SampleCollectionDate>
    <dna:SampleCategory>ActualBiologicalSpouse</dna:SampleCategory>
    <dna:SampleCellularType>Hair</dna:SampleCellularType>
    <dna:SampleTypingTechnology>Str</dna:SampleTypingTechnology>
    <dna:SpecimenContributor>Known</dna:SpecimenContributor>
    <dna:SampleCollectionMethod>Picked from
contributor</dna:SampleCollectionMethod>
    <dna:SampleCollectionLocation>Contributor's
home</dna:SampleCollectionLocation>
  </dna:RepresentationHeader>
  <dna:DnaTypingData>
    <dna:DateAndTimeOfAnalysis>2014-01-
28T16:01:15Z</dna:DateAndTimeOfAnalysis>
    <dna:BatchId>BATCH-0001</dna:BatchId>
    <dna:DnaProfileId>19794-14-1-2</dna:DnaProfileId>
    <dna:KitId>PowerPlex 1.1</dna:KitId>
    <dna:LabCertifications>
      <dna:LabCertification>Isolec17025Certification</dna:LabCertification>
    </dna:LabCertifications>
    <dna:ScopeOfAccreditations>

```

```

    <dna:ScopeOfAccreditation>Nuclear</dna:ScopeOfAccreditation>
  </dna:ScopeOfAccreditations>
  <dna:Request>
    <dna:RequestValue>DataSubmission</dna:RequestValue>
  </dna:Request>
  <dna:Result>
    <dna:ResultValue>UserDefined</dna:ResultValue>
    <dna:UserDefined>
      <dna:TypeCode></dna:TypeCode>
      <dna:Data></dna:Data>
    </dna:UserDefined>
  </dna:Result>
  <dna:ErrorMessage></dna:ErrorMessage>
  <dna:SupplementaryMessage></dna:SupplementaryMessage>
</dna:DnaTypingData>
<dna:DnaTyping>
  <dna:StrDnaType>
    <dna:LocusInformation>
      <dna:LocusHeader>
        <dna:NameOfLocusMarker>CSF1P0</dna:NameOfLocusMarker>
        <dna:Status>Normal</dna:Status>
      </dna:LocusHeader>
      <dna:AlleleCall>
        <dna:Operator>Equal</dna:Operator>
        <dna:AlleleCallNumber1>11</dna:AlleleCallNumber1>
      </dna:AlleleCall>
      <dna:AlleleCall>
        <dna:Operator>Equal</dna:Operator>
        <dna:AlleleCallNumber1>12</dna:AlleleCallNumber1>
      </dna:AlleleCall>
    </dna:LocusInformation>
    <dna:LocusInformation>
      <dna:LocusHeader>
        <dna:NameOfLocusMarker>D13S317</dna:NameOfLocusMarker>
        <dna:Status>Normal</dna:Status>
      </dna:LocusHeader>
      <dna:AlleleCall>
        <dna:Operator>Equal</dna:Operator>
        <dna:AlleleCallNumber1>12</dna:AlleleCallNumber1>
      </dna:AlleleCall>
      <dna:AlleleCall>
        <dna:Operator>Equal</dna:Operator>
        <dna:AlleleCallNumber1>12</dna:AlleleCallNumber1>
      </dna:AlleleCall>
    </dna:LocusInformation>
    <dna:LocusInformation>
      <dna:LocusHeader>
        <dna:NameOfLocusMarker>D16S539</dna:NameOfLocusMarker>
        <dna:Status>Normal</dna:Status>
      </dna:LocusHeader>
      <dna:AlleleCall>
        <dna:Operator>Equal</dna:Operator>

```

```

    <dna:AlleleCallNumber>11</dna:AlleleCallNumber>
  </dna:AlleleCall>
<dna:AlleleCall>
  <dna:Operator>Equal</dna:Operator>
  <dna:AlleleCallNumber>11</dna:AlleleCallNumber>
</dna:AlleleCall>
</dna:LocusInformation>
<dna:LocusInformation>
  <dna:LocusHeader>
    <dna:NameOfLocusMarker>D18S51</dna:NameOfLocusMarker>
    <dna:Status>Normal</dna:Status>
  </dna:LocusHeader>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber>13</dna:AlleleCallNumber>
  </dna:AlleleCall>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber>14</dna:AlleleCallNumber>
  </dna:AlleleCall>
</dna:LocusInformation>
<dna:LocusInformation>
  <dna:LocusHeader>
    <dna:NameOfLocusMarker>D21S11</dna:NameOfLocusMarker>
    <dna:Status>Normal</dna:Status>
  </dna:LocusHeader>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber>30</dna:AlleleCallNumber>
  </dna:AlleleCall>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber>31</dna:AlleleCallNumber>
  </dna:AlleleCall>
</dna:LocusInformation>
<dna:LocusInformation>
  <dna:LocusHeader>
    <dna:NameOfLocusMarker>D3S1358</dna:NameOfLocusMarker>
    <dna:Status>Normal</dna:Status>
  </dna:LocusHeader>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber>15</dna:AlleleCallNumber>
  </dna:AlleleCall>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber>16</dna:AlleleCallNumber>
  </dna:AlleleCall>
</dna:LocusInformation>
<dna:LocusInformation>
  <dna:LocusHeader>
    <dna:NameOfLocusMarker>D5S818</dna:NameOfLocusMarker>

```

```

    <dna:Status>Normal</dna:Status>
  </dna:LocusHeader>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber1>12</dna:AlleleCallNumber1>
  </dna:AlleleCall>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber1>15</dna:AlleleCallNumber1>
  </dna:AlleleCall>
</dna:LocusInformation>
<dna:LocusInformation>
  <dna:LocusHeader>
    <dna:NameOfLocusMarker>D7S820</dna:NameOfLocusMarker>
    <dna:Status>Normal</dna:Status>
  </dna:LocusHeader>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber1>10</dna:AlleleCallNumber1>
  </dna:AlleleCall>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber1>11</dna:AlleleCallNumber1>
  </dna:AlleleCall>
</dna:LocusInformation>
<dna:LocusInformation>
  <dna:LocusHeader>
    <dna:NameOfLocusMarker>D8S1179</dna:NameOfLocusMarker>
    <dna:Status>Normal</dna:Status>
  </dna:LocusHeader>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber1>13</dna:AlleleCallNumber1>
  </dna:AlleleCall>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber1>13</dna:AlleleCallNumber1>
  </dna:AlleleCall>
</dna:LocusInformation>
<dna:LocusInformation>
  <dna:LocusHeader>
    <dna:NameOfLocusMarker>FGA</dna:NameOfLocusMarker>
    <dna:Status>Normal</dna:Status>
  </dna:LocusHeader>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber1>23</dna:AlleleCallNumber1>
  </dna:AlleleCall>
  <dna:AlleleCall>
    <dna:Operator>Equal</dna:Operator>
    <dna:AlleleCallNumber1>23</dna:AlleleCallNumber1>
  </dna:AlleleCall>

```