



Arbitration CAS 2016/O/4464 International Association of Athletics Federations (IAAF) v. All Russia Athletics Federation (ARAF) & Ekaterina Sharmina, award of 29 November 2016

Panel: Prof. Michael Geistlinger (Austria), Sole Arbitrator

Athletics (middle distance)

Doping (Athlete's Biological Passport, ABP)

CAS Jurisdiction according to Article 38.3 IAAF Competition Rules

Version of the regulations applicable and time of the anti-doping violation

Prerequisites to disregard sample from ABP profile

Validity of ABP irrespective of number of ABP samples

Establishment of an anti-doping rule violation by means of an ABP

Disqualification of results in case of a violation found by reference to the ABP

Application of the principle of proportionality with regard to disqualification of results

Purpose of disqualification of results

- 1. In circumstances where an IAAF member federation is prevented from convening and completing a hearing within the deadline set by Rule 38.3 of the IAAF Competition Rules (the "IAAF Rules"), e.g. because it is suspended from IAAF activities, the IAAF is permitted to refer the matter directly to a sole arbitrator appointed by CAS, subject to an appeal to CAS in accordance with Rule 42 of the IAAF Rules. In case of such referral it is Rule 38.3 of the IAAF Rules that establishes the jurisdiction of CAS.**
- 2. Pursuant to the legal principle of *tempus regit actum*, procedural matters of a case are governed by the regulations in force at the time of the procedural act in question. Conversely the substantive aspects of an alleged anti-doping rule violation shall be governed by the version of the applicable rules that have been in force at the time of the alleged violation unless the rules applicable at that time contain a *lex mitior* rule and the application of this leads to the applicability of another version of the respective rules in the specific case. In order to determine the point of time at which an anti-doping rule violation established by the ABP has been committed it has to be taken into account that an ABP-based anti-doping rule violation is not a case of a multiple anti-doping rule violation; further, it is the date of the first ABP sample(s) that determines the start of the rule violation.**
- 3. For an athlete to explain the abnormal values of his Athlete Biological Passport (ABP) as having been caused by non-doping related means (e.g. by training at high altitude, sleeping in hypoxic tents, miscarriage or subsequent surgeries, intake of iron) the athlete needs to adduce evidence rebutting the establishment of an anti-doping rule violation made by the expert opinions that analysed the athlete's ABP. In the absence of any such evidence the athlete's ABP remains as it is, no sample(s) are excluded from his ABP.**

4. The ABP Operating Guidelines do not determine that an ABP must consist of a certain minimum number of samples before an athlete can be charged.
5. Abnormal values in the ABP of an athlete for which he cannot provide a credible explanation do not on their own allow the conclusion that an anti-doping rule violation has been committed. Rather, the deviations in the ABP are to be interpreted by experts, called to examine various hypothesis that could explain the abnormality in the profile values; *i.e.* a distinction is made between a “quantitative” and a “qualitative” assessment of the evidence. Specifically, the inference to be drawn from abnormal blood values is enhanced where the ascertainment of such values occurs at a time when the athlete in question could benefit from blood manipulation, *i.e.* if the levels coincidence with the athlete’s racing schedule. In conclusion, to find that an athlete had committed an anti-doping rule violation the panel needs to be convinced that the abnormal values are caused by a “doping scenario”, which does not necessarily derive from the quantitative information provided by the ABP, but rather from a qualitative interpretation of the experts and possible further evidence.
6. Although the provisions of the IAAF Rules regarding disqualification of results are expressly made applicable to violations consisting of use of a prohibited method, they are not easy to apply where the proof of such violation is to be found by reference to the ABP. The provisions are geared to the situation where the violation is an occurrence rather than a process, most obviously where the violation is the presence of a prohibited substance. However, even if the violation is found by reference to the ABP, the respective case falls under Rule 40 of the IAAF Rules and, as a consequence, the athlete’s competitive results are nevertheless subject to disqualification.
7. The 2016-2017 IAAF Rules regarding disqualification of results (Rule 40.9) differ from the 2012-2013 IAAF Rules (Rule 40.8) as the previous regulations include a fairness exception (“unless fairness requires otherwise”), whereas the latter – read literally – do not. Considering however that Article 10.8 of the WADA Code 2009 included the fairness exception, that this provision was part of the obligatory commitment of the IAAF as signatory to the WADA Code according to Article 23.2.2 WADA Code and that the IAAF was not allowed to include any substantial change to this provision, the fairness exception has to be read into Rule 40.8 2012-2013 IAAF Rules, read together with Articles 10.8 and 23.2.2 WADA Code.
8. In the context of an anti-doping rule violation established by means of an ABP disqualification of results going back to the first sample collected in the context of the ABP may, in certain circumstances, be deemed excessive in terms of proportionality. However, not to disqualify results that have been achieved by using a prohibited substance or prohibited method cannot be considered as fair with regard to other athletes that competed against the athlete during this period. The main purpose of disqualification of results is not to punish the transgressor, but rather to correct any unfair advantage and remove any tainted performances from the record.

I. PARTIES

1. The International Association of Athletics Federations (the “Claimant” or the “IAAF”) is the world governing body for the sport of Athletics, established for an indefinite period with legal status as an association under the law of Monaco. The IAAF has its registered seat in Monaco.
2. The All Russia Athletics Federation (the “First Respondent” or the “ARAF”) is the national governing body for the sport of Athletics in the Russian Federation, with its registered seat in Moscow, Russian Federation. The ARAF is a member federation of the IAAF, currently suspended from membership.
3. Ms Ekaterina Sharmina (the “Second Respondent” or the “Athlete”) is a Russian athlete specialising in middle distance events (800 metres to 1,500 metres). The Athlete won a bronze medal in the 2011 European Indoor Championships in Paris, a gold medal at the 2013 Universiade in Kazan and placed 6th in the 2013 World Championships in Moscow on the 1,500 metres. The Athlete is an International-Level Athlete for the purposes of the IAAF Competition Rules (the “IAAF Rules”).

II. FACTUAL BACKGROUND

4. Below is a summary of the main relevant facts, as established on the basis of the parties’ written and oral submissions and the evidence examined in the course of the present arbitration proceedings and during the hearing. This background is set out for the sole purpose of providing a synopsis of the matter in dispute. Additional facts may be set out, where relevant, in connection with the legal discussion that follows. While the Sole Arbitrator has considered all the facts, allegations, legal arguments and evidence submitted by the parties in the present proceedings, he refers in his Award only to the submissions and evidence he considers necessary to explain his reasoning.
5. The Athlete has been charged with violating Rule 32.2(b) of the 2012-2013 and 2015 IAAF Rules: “*Use or Attempted Use by an Athlete of a Prohibited Substance or a Prohibited Method*”.
6. The evidence of the Athlete’s alleged anti-doping rule violation in the matter at hand is based on a longitudinal analysis of her Athlete Biological Passport (the “ABP”) and allegedly involves prohibited blood doping during the period between March 2011 and August 2015.
7. From 3 March 2011 until 5 August 2015, the IAAF collected 13 ABP blood samples from the Athlete. Each of the samples was analysed by a laboratory accredited by the World Anti-Doping Agency (“WADA”) and logged in the Anti-doping Administration & Management System (“ADAMS”) using the Adaptive Model, a statistical model that calculates whether the reported HGB (haemoglobin concentration), RET% (percentage of immature red blood cells – reticulocytes) and OFF-score (a combination of HGB and RET%) values fall within an athlete’s expected distribution.
8. The registered values for HGB, RET% and OFF-score in the Athlete’s respective samples are as follows:

No.	Date of Sample	HBG (g/dL)	RET%	OFF-score
1.	3 March 2011	14.60	0.72	95.10
2.	17 June 2011	14.80	0.58	102.30
3.	26 August 2011	15.00	0.94	91.80
4.	24 November 2012	13.50	1.05	73.50
5.	18 January 2013	12.90	0.69	79.20
6.	30 April 2013	15.80	1.03	97.10
7.	21 June 2013	15.60	0.58	110.31
8.	4 July 2013	14.80	0.50	105.60
9.	9 August 2013	13.70	1.40	66.00
10.	19 December 2013	13.50	0.99	75.30
11.	24 April 2014	13.10	0.99	71.30
12.	18 June 2015	15.00	0.42	111.10
13.	5 August 2015	15.10	0.87	95.00

9. On 10 and 14 December 2014 respectively, at least two experts with knowledge in the field of clinical haematology (diagnosis of blood pathological conditions), laboratory medicine and haematology (assessment of quality control data, analytical and biological variability and instrument calibration) and sports medicine and exercise physiology: Prof. Giuseppe d’Onofrio and Dr. Yorck Olaf Schumacher analysed the first nine or ten samples of the Athlete’s ABP on an anonymous basis¹. Dr. Schumacher concluded that “[i]he information received is suspicious for doping and additional investigation should be pursued” and clarified that “more data is needed. I would therefore recommend conducting further tests, more specifically true [sic] out of competition tests”. Prof. d’Onofrio concluded that “[i]t is highly unlikely that the longitudinal profile is the result of a normal physiological or pathological condition and may be the result of the use of a prohibited substance or prohibited method”. There may well have been conducted a third analysis by another expert, but such analysis is not part of the file.
10. Accordingly, since the experts were not unanimous, the Athlete was not informed of the alleged abnormalities in her ABP, but further samples were collected and added to her ABP.
11. On 21, 23 and 24 July 2015 respectively, three experts with knowledge in the field of clinical haematology (diagnosis of blood pathological conditions), laboratory medicine and haematology (assessment of quality control data, analytical and biological variability and instrument calibration) and sports medicine and exercise physiology: Prof. Giuseppe d’Onofrio, Dr. Yorck Olaf Schumacher, and Prof. Michel Audran (the “Expert Panel”) analysed the Athlete’s ABP (again) on an anonymous basis and concluded independent from each other that there was “*Likely doping*” (the “First Expert Panel Report”). In their respective expert reports, Dr. Schumacher and Prof. d’Onofrio referred to their previous reports issued on the basis of the Athlete’s ABP.

¹ It appears from the initial reports of Prof. d’Onofrio and Dr. Schumacher that the former analysed the first nine samples of the Athlete and the latter the first ten.

12. On 15 September 2015, the IAAF Anti-Doping Administrator informed the ARAF that the IAAF was considering bringing charges against the Athlete on the basis of her ABP but that such charges would not be brought until she had been given the opportunity to provide an explanation for the alleged abnormalities.
13. On 5 October 2015, the Athlete sent an email to the IAAF providing explanations for her ABP profile and added certain medical documentation in support of her explanations. She argued as reasons for the abnormalities, in particular, a miscarriage in October 2012, a subsequent endometriosis, heavy menstrual bleeding, the use of a hypoxic tent and iron supplements during 2013, three surgical interventions with use of antibiotics during 2014, and, in general, high natural haemoglobin values.
14. On 30 November 2015, the Expert Panel issued a joint report (the “Joint Expert Opinion”), in which the Athlete’s explanations were considered, concluding that “[b]ased on scientific scrutiny of the different points forwarded by the athlete, we do not think that any of the arguments explain the abnormalities of the profile. Considering the information available at this stage, we therefore confirm our previous opinion that this profile is highly suspicious for blood manipulation. It is highly unlikely that it is the result of a normal physiological or pathological condition but might in contrast be caused by the use of prohibited substances or prohibited methods”.
15. On 7 December 2015, the IAAF notified ARAF of the alleged anti-doping rule violation of the Athlete, her immediate provisional suspension and her right to request a hearing.
16. On 21 December 2015, the Athlete informed the IAAF that she did not admit to the violation and requested to be provided with a complete set of the laboratory analyses of her blood samples.
17. Also on 21 December 2015, the IAAF informed the Athlete that ARAF’s membership had been suspended, that it took over the responsibility for coordinating the disciplinary proceedings and that her case would be referred to the Court of Arbitration for Sport (“CAS”). The Athlete was offered to choose between the following two procedures:
 - (1) *“before a Sole Arbitrator of the CAS sitting as a first instance hearing panel pursuant to IAAF Rule 38.3. The case will be prosecuted by the IAAF and the decision will be subject to an appeal to CAS in accordance with IAAF Rule 42; or*
 - (2) *before a CAS Panel as a single hearing, with the agreement of WADA and any other anti-doping organisations with a right of appeal, in accordance with IAAF Rule 38.19. The decision rendered will not be subject to an appeal”.*
18. The Athlete never responded to the IAAF letter dated 21 December 2015.

III. PROCEEDINGS BEFORE THE COURT OF ARBITRATION FOR SPORT

19. On 22 February 2016, the IAAF lodged a Request for Arbitration with CAS in accordance with Article R38 of the Code of Sports-related Arbitration (2016 edition) (the “CAS Code”). The

IAAF informed CAS that its Request for Arbitration was to be considered as its Statement of Appeal and Appeal Brief and requested the matter to be submitted to a sole arbitrator. This document contained a statement of the facts and legal arguments and included the following requests for relief:

- (i) *“CAS has jurisdiction to decide on the subject matter of this dispute;*
- (ii) *The Request for Arbitration of the IAAF is admissible.*
- (iii) *The Athlete be found guilty of an anti-doping rule violation in accordance with Rule 32.2(b) of the IAAF Rules.*
- (iv) *A period of ineligibility of between two and four years be imposed upon the Athlete, commencing on the date of the (final) CAS Award. Any period of ineligibility or provisional suspension effectively served by the Athlete before the entry into force of the CAS award shall be credited against the total period of ineligibility to be served.*
- (v) *All competitive results obtained by the Athlete from 17 June 2011, through to the commencement of her provisional suspension on 7 December 2015, shall be disqualified, with all resulting consequences (including forfeiture of any titles, awards, medals, profits, prizes and appearance money).*
- (vi) *The arbitration costs be borne entirely by the Respondents.*
- (vii) *The IAAF is awarded a contribution to its legal costs”.*

20. On 25 February 2016, the CAS Court Office initiated the present arbitration and specified that, as requested by the Claimant, it had been assigned to the CAS Ordinary Arbitration Division but would be dealt with according to the Appeals Arbitration Division rules. The Respondents were further invited to submit their Answer.

21. On 31 March 2016, the ARAF requested the IAAF to clarify why the ARAF was involved in this case as a Respondent, not as a witness, and what types of relief are sought by the IAAF against the ARAF.

22. On 2 April 2016, the Athlete, not represented by legal counsel at the time, sent her Answer in accordance with Article R55 of the CAS Code to the Claimant, who forwarded it to the CAS Court Office. The Athlete did not submit any specific requests for relief, but concluded her Answer as follows:

“I admit the guilt the fact that being a professional athlete, have shown negligence and have threatened myself disqualifications. If with 2012 and for 2013 and 2014 I informed VFLA and WADA on the problems with health, would study the code of WADA and would know the rights, such situation as didn't happen now”.

23. On 11 April 2016, the IAAF informed the CAS Court Office that CAS is effectively acting as a substitute for the ARAF because of the ARAF's inability to conduct disciplinary proceedings in Russia in due time and that the IAAF Rules clearly contemplate that, in these circumstances,

the costs of those proceedings will be borne by the ARAF. The IAAF therefore maintained its requests for relief against the ARAF.

24. On 19 April 2016, in accordance with Article R54 of the CAS Code, and on behalf of the President of the CAS Ordinary Arbitration Division, the CAS Court Office informed the parties that the arbitral tribunal appointed to decide the present matter was constituted by:
 - Dr. Hans Nater, Attorney-at-Law in Zurich, Switzerland.
25. On 29 April 2016, the Athlete informed the CAS Court Office that she was represented by *pro bono* counsel, who requested to suspend all pending deadlines to have the opportunity to review the file and reserved the right to amend and/or supplement the Athlete's statements, claims, defences, and evidence or to provide additional explanations, expert opinions, witness statements, or other supporting evidence if necessary.
26. On 2 May 2016, the IAAF requested the Athlete to clarify what she proposed to file, if anything, in these proceedings, while referring to Article R56 of the CAS Code.
27. On 12 May 2016, the Athlete informed the CAS Court Office that the reservation of rights of 29 April 2016 was a matter of professional courtesy to address, for example, any arguments and/or evidence that may come forth following any submissions by the IAAF or the ARAF, and/or clarifications of the response previously filed by the Athlete and added that any such filings would be made in compliance with the CAS Code.
28. On 17 May 2016 and further to a challenge of the Sole Arbitrator filed by the Second Respondent, Dr. Nater decided to resign from the present case in order to avoid any delay in this arbitration procedure.
29. On 27 May 2016, in accordance with Article R54 of the CAS Code, and on behalf of the President of the CAS Ordinary Arbitration Division, the CAS Court Office informed the parties that the arbitral tribunal appointed to decide the present matter was constituted by:
 - Prof. Dr. Michael Geistlinger, Professor in Salzburg, Austria.
30. The parties were further informed that Mr Dennis Koolaard would act as *Ad hoc* Clerk.
31. On 2 June 2016, the Athlete informed the CAS Court Office of her wish to file an Amended Answer and expressed her hope that the IAAF would agree to such request.
32. On 8 June 2016, the Athlete supplemented her request of 2 June 2016 by requesting permission that such Amended Answer would also include an expert statement on the subject of the Athlete's ABP, and the method used to analyse such results.
33. On 9 June 2016, the IAAF informed the CAS Court Office that it would not oppose the Athlete being allowed to file another submission, provided that such submission would be filed and received at the latest 14 days prior to the hearing.

34. On 10 June 2016, the CAS Court Office informed the parties that in view of the IAAF's agreement, the Athlete was allowed to submit an Amended Answer by 17 June 2016.
35. On 17 June 2016, the Athlete filed her Amended Answer in accordance with the instructions of the Sole Arbitrator. Enclosed to the Amended Answer was an expert report of Dr. Klaas Faber. The Athlete submitted the following requests for relief:
 - a. *The anti-doping rule violation charges against the Second Respondent be entirely dismissed;*
 - b. *The provisional suspension imposed against the Second Respondent be lifted;*
 - c. *The Second Respondent be awarded a substantial contribution towards her costs and attorney's fees;*
 - d. *If it is found that an anti-doping rule violation has occurred, the period of ineligibility shall not exceed two years; and*
 - e. *The Second Respondent is provided with such other relief that the Sole Arbitrator deems just, equitable, and lawful*".
36. Also on 17 June 2016 and together with her Amended Answer, the Athlete filed six requests for production of documents.
37. On 23 June 2016, the IAAF called an additional expert to the hearing in the person of Dr. Sottas, in view of the Athlete's Amended Answer and the expert report enclosed thereto challenging the validity of the ABP in general. The IAAF requested the Athlete to be ordered to (i) produce a CV for Dr. Faber and (ii) clarify whether he is appearing as a legal expert, a scientific expert or both. The IAAF requested certain new documents to be added to the file regarding the background of Dr. Faber. Finally, the IAAF requested the Athlete's application for production of documents to be dismissed as such request should have been filed together with her Answer and is in any event raised too late. In addition, the IAAF made certain comments in respect of the Athlete's individual requests for production of documents requesting their dismissal.
38. Also on 23 June 2016, the Athlete addressed the IAAF's objections to the requests for production of documents and objected to Dr. Sottas attending the hearing, especially because he had not provided any written opinion that would allow the Athlete to prepare for cross-examination. The Athlete voluntarily withdrew request for production of documents no. 6. Finally, the Athlete requested the IAAF to clarify whether it wished the document enclosed to its letter dated 23 June 2016 to be added to the file.
39. On 24 June 2016, the CAS Court Office, on behalf of the Sole Arbitrator, informed the parties that it was appropriate to hear Dr. Sottas at the hearing. The IAAF was requested to provide a short expert report of Dr. Sottas on or before 27 June 2016. Furthermore, the Sole Arbitrator considered that the Athlete had sufficiently established that the documents requested in her requests for production of documents no. 1, 2 and 4 are likely to exist and relevant, but that she failed to sufficiently establish the relevancy of request no. 3 and 5. The reasoning behind the decision of the Sole Arbitrator is set out in more detail below (see paras. 78-88).

40. On 27 June 2016, the Athlete produced Dr. Faber's CV.
41. Also on 27 June 2016, the IAAF produced the documents as ordered by the Sole Arbitrator on 24 June 2016 and an expert report of Dr. Sottas. The IAAF also invoked Article R56 of the CAS Code and requested the Sole Arbitrator to admit new documents to the file based on exceptional circumstances, being that the IAAF could not have produced them before the Athlete made (erroneous) comments about her whereabouts in her witness statement. The documents submitted by the IAAF would allegedly show that the whereabouts of the Athlete as set out in her witness statement do not coincide with the Athlete's whereabouts in ADAMS. From the whereabouts information in ADAMS it does not appear that the Athlete trained at altitude in the relevant period.
42. On 28 June 2016, the Athlete confirmed not to object to the admissibility of the IAAF's submission of 27 June 2016, but disputed the allegations made by the IAAF and submitted a google map.
43. Also on 28 June 2016, the Athlete requested for articles co-authored by Dr. Sottas to be admitted into evidence for the purposes of cross-examining Dr. Sottas.
44. On 27, 29 and 30 June 2016 respectively, the IAAF, the Athlete and ARAF returned duly signed copies of the Order of Procedure to the CAS Court Office.
45. On 29 June 2016, a hearing was held in Lausanne, Switzerland. At the outset of the hearing, all parties confirmed that they had no objection to the constitution and composition of the arbitral tribunal.
46. In addition to the Sole Arbitrator, Ms Pauline Pellaux, Counsel to the CAS, and Mr Dennis Koolaard, *Ad hoc* Clerk, the following persons attended the hearing:

For the IAAF:

- Mr Ross Wenzel, Counsel;
- Mr Nicolas Zbinden, Counsel

For the Athlete:

- Ms Ekaterina Sharmina, the Athlete, by video-conference;
- Mr Gorsha Sur, Counsel;
- Ms Jennifer Yuen, Counsel, by video-conference;
- Ms Larissa Baklina, Interpreter, by video-conference

47. The Sole Arbitrator heard evidence of the following persons in alphabetical order:
 - Dr. Klaas Faber, expert forensic scientist;

- Prof. Giuseppe d’Onofrio, expert haematologist;
 - Dr. York Olaf Schumacher, expert in sports medicine, by video-conference;
 - Dr. Pierre-Edouard Sottas, ABP expert.
48. All experts were invited by the Sole Arbitrator to tell the truth subject to the sanctions of perjury. All parties and the Sole Arbitrator had the opportunity to examine and cross-examine the witnesses and experts in person.
49. During the hearing, the IAAF confirmed to have no objection to the admission to the file of the documents presented by the Athlete on 28 June 2016. Equally, the Athlete confirmed to have no objection to the admission to the file of the document presented by the IAAF on 23 and 27 June 2016.
50. Dr. Faber, Prof. d’Onofrio, Dr. Schumacher and Dr. Sottas were all invited to explain their point of view and to enter into a debate with each other on the issues where their opinions diverged, *i.e.* an expert conference was held. The expert conference was divided in two parts, the first part focussing on the Athlete’s ABP with the participation of all experts and the second part focussing on the ABP as a means of evidence in general with the participation of Dr. Faber and Dr. Sottas.
51. During the hearing, the entry into force of the 2015 version of the IAAF Rules was discussed, which resulted in a request from the Sole Arbitrator to the IAAF to submit, within two days, evidence that Chapter 3 of the IAAF Rules effective 1 January 2015 was implemented by the IAAF.
52. The parties were afforded ample opportunity to present their case, submit their arguments and answer the questions posed by the Sole Arbitrator.
53. Before the hearing was concluded, all parties expressly stated that they did not have any objection with the procedure adopted by the Sole Arbitrator and that their right to be heard had been respected.
54. On 1 July 2016, further to the request of the Sole Arbitrator, the IAAF provided evidence that the 2013 IAAF Congress gave a mandate to the IAAF Council to approve new Code-compliant rules by 1 January 2015, that the November 2014 IAAF Council approved the new Code-compliant anti-doping regulations in accordance with its mandate and that Chapter 3 of the IAAF Rules indeed entered into force on 1 January 2015.
55. On 5 October 2016, the Sole Arbitrator offered the parties the opportunity to submit observations in writing strictly limited to the issue of proportionality related to a strict application of Rule 40.8 of the 2012-2013 IAAF Rules, should the Sole Arbitrator find that (i) the Athlete committed an anti-doping rule violation and (ii) this version of the IAAF Rules is applicable to the merits of the case.

56. On 13 October 2016, the Claimant and the Athlete submitted their observations. The Claimant, referring to CAS case law, argued in the strongest possible terms that the principle of proportionality should not be revived and applied in this case and that, if the Sole Arbitrator were to consider the fairness exception as a result of the general principle of fairness, it should not be applied on the facts of the case. The Athlete, referring to other CAS case law, argued that the principle of proportionality is part of European law and inherent in the context of sports law and has to be considered as to eventual additional sanctions under Rule 40.8 2012-2013 IAAF Rules. In the opinion of the Athlete, the principle requires a three-prong test of *“whether the sanction 1) achieves a legitimate aim, 2) is necessary to achieve that aim or there are less restrictive means available, and 3) is reasonable, considering the competing interests of the group affected”*. The application of such test leads the Athlete to argue that to impose such additional sanction would be unreasonably burdensome and disproportional to any harm done as a result of the Athlete’s anti-doping rule violation. The Athlete submitted that the Sole Arbitrator shall refrain from a sanction under Rule 40.8, give proper consideration to the Athlete’s severe financial situation and take into account the period of constructive suspension between August 2015 and December 2015.
57. The Sole Arbitrator confirms that he carefully took into account in his decision all of the submissions, evidence, and arguments presented by the parties, even if they have not been specifically summarised or referred to in the present arbitral award.

IV. SUBMISSIONS OF THE PARTIES

58. The IAAF’s submissions, in essence, may be summarised as follows:
- The IAAF’s case is that the Athlete’s ABP profile constitutes clear evidence that the Athlete has committed an anti-doping rule violation in breach of Rule 32.2(b) of the 2012-2013 and 2015 IAAF Rules as follows:
 - The ABP sequence is abnormal for HGB and OFF-score with a probability in excess of 99.9%.
 - The Expert Panel flatly rejected each of the physiological and non-physiological explanations put forward by the Athlete to explain the abnormalities in her passport.
 - The Athlete’s ABP profile reveals a supraphysiological increase in red cell mass in and around competition periods. HGB levels are markedly higher during the summer months (competition period), contrary to what one would expect physiologically.
 - The Expert Panel draws particular attention to the significant variation in HGB levels. In particular, the circa 22.5% rise in HGB from 12.9 g/dL to 15.8 g/dL in a period of three and a half months between Sample 5 (18 January 2013) and Sample 6 (30 April 2013) is considered as highly suspicious by the Expert Panel.

The HGB value of Sample 6 is the highest in the entire profile and follows the lowest HGB value in sample 5.

- The subsequent sample (*i.e.* Sample 7 from 21 June 2013) is considered by Prof. d’Onofrio in his First Expert Opinion to be the most clear indication of blood manipulation. Taken on the eve of a competition, this sample shows elevated HGB and low RET%, thereby producing a high OFF-score value of 110.31.
- Prof. Audran notes in his First Expert Opinion that Sample 9 (from 9 August 2013) has a low OFF-score value (66.00) that is abnormal to a specificity of 99%.
- Prof. d’Onofrio mentions in his First Expert Opinion that Sample 12 (18 June 2015) is indicative of an OFF phase, with high HGB (15.0) and low RET% (0.42). Indeed, the OFF-score value of this sample is the highest in the entire profile at 111.10).
- It is interesting to note that the OFF-score value only exceeds 100 points on four occasions:
 - All of these samples were taken in the early summer months *i.e.* June-July: 102.30 on 17 June 2011 (Sample 2), 110.31 on 21 June 2013 (Sample 7), 105.60 on 4 July 2013 (Sample 8) and 111.10 on 18 June 2015 (Sample 12).
 - Sample 2 was taken two days before the Athlete competed in the European Team Championships in Stockholm on 19 June 2011; Sample 7 was taken one day before the Athlete competed in the European Team Championships in Gateshead on 22 and 23 June 2013; Sample 8 was taken about a week before the Athlete competed in the Universiade in Kazan on 10 and 12 July 2013 and Sample 12 was taken several days after the Athlete competed in international meetings in Rabat (Morocco) on 14 June and Huleva (Spain) on 10 June.
- In short, the Athlete’s profile reveals a non-physiological variability in HGB levels. Moreover, the HGB levels are consistently higher in the summer months around competition periods. As noted in the Joint Expert Opinion, the *“haemoglobin values close to 15g/dl only seem to occur during the summer months/ in vicinity of major competitions”*.
- The *“clear pattern”* of elevated HGB to which Prof. Schumacher refers in his First Expert Opinion is particularly evident in the summer samples from 2011, 2013 and 2015. The IAAF submits that the ABP profile of the Athlete constitutes reliable evidence of blood doping in the period from 2011 to 2015.
- As to the period of ineligibility, the IAAF maintains that Sample 12 (of 18 June 2015) is evidence of an anti-doping rule violation occurring in 2015. Since blood doping is an intentional form of doping and because the 2015 IAAF Rules are applicable to such

violation, the IAAF concludes that the Athlete must be sanctioned with a period of ineligibility of four years.

- In addition, the IAAF argues that, in the unlikely event that the Sole Arbitrator is not comfortably satisfied that the Athlete has committed an anti-doping rule violation in 2015 – but rather finds that the violations are limited to the period before 2015 – the IAAF nonetheless submits that, on the basis of Rule 40.6 of the 2012 IAAF Rules, the period of ineligibility may be increased up to a maximum of a four-year period of ineligibility due to aggravating circumstances, as the evidence indicates that the Athlete (i) used a prohibited substance or prohibited method on multiple occasions and (ii) engaged in a doping plan or scheme.
- The IAAF submits that – even in the event that the Sole Arbitrator is not comfortably satisfied that the Athlete committed an anti-doping rule violation in 2015 – it would be appropriate to impose a period of ineligibility towards the higher end of the 2-4 year spectrum pursuant to the 2012 IAAF Rules.
- Finally, the IAAF submits that, unless the Athlete accepts that her anti-doping rule violation(s) may be sanctioned entirely in accordance with the 2016-2017 IAAF Rules (*i.e.* including with respect to the applicable period of ineligibility), all her results from 17 June 2011 (*i.e.* the date Sample 2 was taken) until her provisional suspension on 7 December 2015 shall be disqualified, together with the forfeiture of any prizes, medals, prize money and appearance money etc.

59. Although duly invited, the ARAF did not submit any position on the merits of the present proceedings.

60. The Athlete's Answer that was submitted before she retained counsel, reads as follows in full:

1. *"Test No. 6 from 4/30/2013 is in not competitive,*

March Kislovodsk height 1200 has been taken in the middle of a preparatory cycle in middle mountains, April (Mariya Roshcha) at the height or 800 m and use of hypoxic tent at night height about 3000 m on an extent of April and May with week breaks trained in Krasnodar Krai. High haemoglobin 158, but I correspond to it high RT 1.03.

2. *After long stay in mountains, during descent from mountains the suppression of reticulocyte the term known as neocytosis is observed that can bring to the high level of haemoglobin and low level of reticulocyte.*

Test No. 7 from 6/21/2013 of HB 156 b RT 0.58 was included on peak of a form and for the first week after descent from highlands (the description of preparation in item 1), and the ends of stay in hypoxic tent.

We can track a similar situation also in other years:

- *in 2011 test No. 2 from 6/17/2011 HB 148 RT 0.58. Preparation took place for 8 weeks April and May in Kislovodsk, in the conditions of middle mountains at height of 1200.*
- *In 2015 test No. 12 from 6/18/2015 HB 150 b RT 0.42. Preparation for a season took place in long cycle of mountain training of Marthe Quislovodsc (height of 1200) for 4 weeks, April Kyrgyzstan (height of 1600 m) 4 weeks*

May Turkmenistan (height of 700 m) and night stay in hypoxic tent at the height about 3000 m of 4 weeks.

I have lowered in 3 days prior to flight on starts to Spain and Morocco. And after return in 12 days I have handed over test.

3. *Sample No. 9 has been taken 8/9/2013 by HB 137 RT 1.40 a day before the main start of a season the World Cup in Moscow (I have taken the 6th place). If to follow logic of experts that before this start I have to have abnormally high rates of blood.*

At the beginning of August there was short, but quite severe bleeding which has approximately stopped by August 5.

4. *Menstrual bleedings.*

Abortion in 2012 and the subsequent to it surgical cleaning have provoked endometriosis, irregular plentiful bleedings began to be observed. Since November and the next months happened bleedings to various frequency, possibly 4 and 5 test gets to this period.

- *Endometriosis is the serious endocrine illness provoking plentiful (menorrhagia) regular bleedings, but still there are Metrorrhagia which have various intensity and are irregular.*
- *Test No. 4 and No. 5*

In January, 2014 I laid down in clinic on inspection, in February and March 2014 I took a girudorepiya course.

Experts confirm this phenomenon (p. 20-25), there is such phenomenon as menorrhagia, but claim that I don't have him, so menorrhagia occurs cyclically. For some reason nor upomyany about metrorrhagia which approaches my situation (no cyclically) more.

Such bleedings can reduces haemoglobin and causes a lack of iron.

What experts in the answer point to that the athlete has provided the analysis and gland at him enough.

What I also specified in the justification (the appendix with analyses of iron) occurred only during the summer period. For health reasons I can prepare only for one season and to sustain huge physical activities, doctors recommended to do me the raised iron doses.

Several winter and autumn months in 2012, 2013 and 2014 I couldn't go on collecting and train because of feeling sick. It there correspond to information in Adams.

If to revise the schedule, without taking the tests connected with health into account, then the following turns out:

[...].

5. *Sample No. 10 has been taken 12/19/2013 on collecting in Portugal, and after return to Russia I have made the test which experts didn't begin to take in attention. Though they have considered analyses of iron from the same laboratory.*

6. *Athletes ABP*

It is important to consider the tests connected with physiological features (4, 5, 9, 10, 11) with other tests and that these fluctuations are in Adaptive Model limits.

"No new evidence was found to justify adjusting the current within-subject [Hb] variance estimate".

"The athletic passport for this purpose is also made to have individual referensny [sic] values of EACH ATHLETE, irrespective of physiological value in human population".

7. *Expert panels*

After September 15, 2015 when I have learned that concerning me case in connection with alleged violations in the biological passport is opened, I asked VFLA to make request for receiving the panel of the expert opinion. Then itself repeatedly I made request addressed to Thomasa [sic] Capdeville and Laura Gallo. Or there was a misunderstanding or ignoring, but I have received the eksperny [sic] decision 18.12.2015

8 *I admit the guilt the fact that being a professional athlete, have shown negligence and have threatened myself disqualifications. If with 2012 and for 2013 and 2014 I informed VFLA and WADA on the problems with health, would study the code of WADA and would know the rights, such situation as didn't happen now".*

61. The Athlete's Amended Answer, in essence, may be summarised as follows:

- The Athlete primarily maintains that the IAAF failed to meet its burden of proof in establishing an anti-doping rule violation to the prerequisite standard of proof (*i.e.* comfortable satisfaction).
- To corroborate this conclusion, the Athlete submits that the IAAF's case hinges upon flawed and misleading expert opinions. The WADA ABP Operating Guidelines do not suggest that the Adaptive Model can be used to prove alleged abnormalities. The Athlete argues that the Adaptive Model fails at a very early stage, considering the number of valid samples in the Athlete's ABP and the period of collection.

- The Athlete maintains that in order for the ABP to be considered a “reliable means”, the alleged abnormalities should be proven with a probability greater than 99,99%, whereas the standard maintained in the present case is only 99,9%.
- The Athlete further submits that the conclusions of the Expert Panel fail to demonstrate real statistical values. Despite the purportedly scientific nature of expert reporting, the terminology used by the Expert Panel is couched in layman terms that find no place in real science. Forensic analysis requires the use of numeric values, rather than descriptive statements to qualify as evidence in legal proceedings.
- The determination in the Joint Expert Opinion that the alleged abnormalities “might” be caused by the use of a prohibited substance or a prohibited method does not rise up to the “highly likely” threshold.
- The IAAF cherry picks the individual outliers to arrive at false conclusions. The Athlete maintains that the IAAF’s conclusion that HGB values are higher in the “summer” periods in comparison with “winter” months is flawed. Not all “summer” samples show elevated levels of HGB, some samples are not referred to as “summer” samples although taken in the summer and some samples are referred to as “summer” samples whereas they should have been referred to as “winter” samples.
- The Athlete refers to the ABP of a well-known British athlete and submits that the IAAF’s charges against the Athlete should be dropped for the same reasons as in the case of the British athlete. The Athlete also trained at high altitude, the timing of certain samples may have affected her hydration levels and the use of antibiotics for illness.
- The Athlete further maintains that the IAAF exceeded its authority by denying the Athlete the opportunity to compete at the IAAF World Championships in Beijing in August 2015 based on the suspicion of a doping offence. According to the Athlete, the IAAF informed ARAF somewhere between 5 and 8 August 2015 that she was removed from Russia’s team for the World Championships based on a “*problem with her ABP*”, whereas she was only provided with a notice of investigation on 15 September 2015, *i.e.* after the World Championships. Thereby, significant harm was caused to the Athlete, whose presumption of innocence was disregarded.
- The IAAF violated Rules 37.3 read together with 37.4 or 37.9 and 37.16 IAAF Rules and, thus, the Athlete’s fundamental rights to prior notice and a fair hearing before provisionally suspending her, were violated.
- As to the period of ineligibility to be imposed should an anti-doping rule violation nevertheless be established, the Athlete argues that she had no intention to violate the anti-doping regime under the IAAF Rules and that her suspension should therefore be limited to two years of ineligibility.
- Furthermore, the Athlete maintains, with reference to CAS jurisprudence, that the “aggravating circumstances” in the present case are insufficient to justify imposing a

suspension closer to the upper limit of the four year maximum suspension, but rather that the suspension should be at the lower end of the 2-4 year spectrum.

V. JURISDICTION

62. The IAAF maintains that the jurisdiction of CAS derives from Rule 38.3 of the 2016-2017 IAAF Rules. As a consequence of its suspension, the ARAF was not in a position to conduct the hearing process in the Athlete's case by way of delegated authority from the IAAF pursuant to Rule 38 of the IAAF Rules. The IAAF argues that, in these circumstances, it is plainly not necessary for it to impose any deadline on the ARAF for that purpose. The Athlete also expressly consented to the application of Rule 38.3 of the IAAF Rules.

63. Rule 38.3 of the IAAF Rules determines as follows:

"If a hearing is requested by an Athlete, it shall be convened without delay and the hearing completed within two months of the date of notification of the Athlete's request to the Member. Members shall keep the IAAF fully informed as to the status of all cases pending hearing and of all hearing dates as soon as they are fixed. The IAAF shall have the right to attend all hearings as an observer. However, the IAAF's attendance at a hearing, or any other involvement in a case, shall not affect its right to appeal the Member's decision to CAS pursuant to Rule 42. If the Member fails to complete a hearing within two months, or, if having completed a hearing, fails to render a decision within a reasonable time period thereafter, the IAAF may impose a deadline for such event. If in either case the deadline is not met, the IAAF may elect, if the Athlete is an International-Level Athlete, to have the case referred directly to a single arbitrator appointed by CAS. The case shall be handled in accordance with CAS rules (those applicable to the appeal arbitration procedure without reference to any time limit for appeal). The hearing shall proceed at the responsibility and expense of the Member and the decision of the single arbitrator shall be subject to appeal to CAS in accordance with Rule 42. A failure of a Member to hold a hearing for an Athlete within two months under this Rule may further result in the imposition of a sanction under Rule 45".

64. The Sole Arbitrator notes that the Athlete is an International-Level Athlete and that the ARAF is indeed prevented from conducting a hearing in the Athlete's case within the deadline set by Rule 38.3 of the IAAF Rules. The Sole Arbitrator confirms that IAAF was therefore permitted to refer the matter directly to a sole arbitrator appointed by CAS, subject to an appeal to CAS in accordance with Rule 42 of the IAAF Rules. The IAAF, ARAF, and the Athlete also confirmed the jurisdiction of CAS based on this Rule by having signed the Order of Procedure.

65. It follows that CAS has jurisdiction to adjudicate and decide on the present matter and that the present case shall be dealt with according to the Appeals Arbitration rules.

VI. APPLICABLE LAW

66. The IAAF maintains that the procedural aspects of these proceedings shall be subject to the 2016-2017 edition of the IAAF Rules and that the substantive aspects of the asserted anti-doping rule violations shall be governed by the 2012-2013 edition of the IAAF Rules, however, the IAAF maintains that the 2015 edition of the IAAF Rules shall apply to the substantive issues

arising from anti-doping rule violations committed in the course of 2015. To the extent that the IAAF Rules do not deal with a relevant issue, Monegasque law shall apply subsidiarily.

67. The ARAF did not put forward any specific position in respect of the applicable law.
68. The Athlete submits that all substantive charges should be governed by the 2012-2013 edition of the IAAF Rules. The bifurcated approach proposed by the IAAF is not considered practicable by the Athlete as the case for the violation occurring after 1 January 2015 on the basis of Sample 12 relies also on considering the Athlete's earlier samples taken prior to 2015. At best, the IAAF could allege that Sample 12 is further evidence of the pattern of blood doping. However, it could only serve as evidence of the "clear pattern" indicated in the pre-2015 samples because Sample 12 is insufficient to sustain the anti-doping violation.
69. Article R58 of the Code provides as follows:

"The Panel shall decide the dispute according to the applicable regulations and, subsidiarily, to the rules of law chosen by the parties or, in the absence of such a choice, according to the law of the country in which the federation, association or sports-related body which has issued the challenged decision is domiciled or according to the rules of law that the Panel deems appropriate. In the latter case, the Panel shall give reasons for its decision".
70. The Sole Arbitrator observes that it is not disputed that the proceedings are primarily governed by the IAAF Rules.
71. Pursuant to the legal principle of *tempus regit actum*, the Sole Arbitrator is satisfied that procedural matters are governed by the regulations in force at the time of the procedural act in question. As such, procedural matters are governed by the 2016-2017 version of the IAAF Rules.
72. In respect of the divergent positions of the parties in respect of whether the Athlete's alleged anti-doping rule violation in 2015 shall be governed by the 2015 version of the IAAF Rules or by the 2012-2013 version, the Sole Arbitrator finds that the 2012-2013 version shall be applied to the substantive issues in this case.
73. Indeed, as set out in legal literature, "[i]n general, the legal principle of *tempus regit actum* applies, i.e. the Panel shall apply the regulations in force at the moment that the violation occurred. In a case related to the ABP (since the ABP is based on the longitudinal profiling of the athlete's sample) [sic] should coincide with the first sample taken" (MAVROMATI D., The Athlete's Biological Passport (ABP) Programme, Bulletin TAS – CAS Bulletin, 2/2011, p. 39).
74. In the opinion of the Sole Arbitrator, this view is supported by considering the transitional provisions of Rule 49.1 2015 IAAF Rules which reads as follows:

"Non-retroactive except for Rule 40.8(e) and Rule 47, or unless the principle of Lex Mitior applies:

The retrospective periods in which prior violations can be considered for the purposes of multiple violations under Rule 40.8(e) and the statute of limitations in Rule 47 are procedural rules and should be applied retroactively;

*provided however that Rule 47 shall only be applied retroactively if the statute of limitations period has not already expired by the Effective Date. Otherwise, with respect to any anti-doping rule violation case which is pending as of the Effective Date and any anti-doping rule violation case brought after the Effective Date based on an anti-doping rule violation which occurred prior to the Effective Date, the case shall be governed by the substantive anti-doping rules in effect at the time the alleged anti-doping rule violation occurred unless the panel hearing the case determines the principle of *lex mitior* appropriately applies in the circumstances of the case”.*

75. The same provisions are included as Rule 49.1 in the 2016-2017 IAAF Rules.
76. Since an ABP-based anti-doping rule violation is not a case of a multiple anti-doping rule violation in the understanding of Rule 40.8(e) 2015 IAAF Rules and since the issue is not falling under Rule 47 2015 IAAF Rules (Statute of Limitations), the second sentence of Rule 49.1 2015 IAAF Rules applies. The ABP-based anti-doping rule violation was pending on 1 January 2015 (“Effective Date”) and the anti-doping rule violation case was brought after 1 January 2015 based on an anti-doping rule violation which occurred prior to 1 January 2015 or, at least, started to occur prior to that date. Assuming that an ABP-based anti-doping rule violation has been proven, which will have to be analysed below in the merits section of this award, it is clear that Sample 12 (18 June 2015) and Sample 13 (5 August 2015) do not stand alone as own anti-doping rule violations. It is the entire ABP profile based on 13 samples that were taken in the period between 2011 and 2015 and held against the competition schedule which is argued to constitute evidence for an ABP-based anti-doping rule violation. For the present proceedings, the ABP-based anti-doping rule violation counts as one anti-doping rule violation which fact is also demonstrated by the submissions of both parties referring to Rule 40.2(a)(i) of the 2015 IAAF or Rules 40.2 and 40.6 of the 2012-2013 IAAF Rules.
77. The understanding of a single ABP-based anti-doping rule violation in the light of Rule 49.1 2015 IAAF Rules, which shall be subject to either the pre-2015 or the 2015 IAAF Rules makes the *lex mitior* principle the decisive element in Rule 49.1.
78. As for the sanctions to be applied, the provisions on ineligibility under aggravating circumstances of the 2012-2013 IAAF Rules (Rules 40.2 and 40.6) are clearly the *lex mitior* in comparison to the 2015 IAAF Rules (Rule 40.2). The 2012-2013 IAAF Rules allow the Sole Arbitrator to decide on a period of ineligibility within a margin of 2 to 4 years, whereas the 2015 IAAF Rules set a standard sanction of 4 years. Since in case of an ABP anti-doping rule violation there can be hardly any circumstances under which an athlete is able to establish that the violation was committed unintentionally, no deviation from the 4 year period of ineligibility will in principle be possible. As to the disqualification of results, the 2015 IAAF Rules (Rule 40.9) differ from the 2012-2013 IAAF Rules (Rule 40.8) as the previous regulations included a fairness exception (“*unless fairness requires otherwise*”), whereas the latter – read literally – do not. Considering that Article 10.8 of the World Anti-Doping Code 2009 (“the WADC”), in force at the relevant time, included a fairness exception, that this provision was part of the obligatory commitment of the IAAF as signatory to the WADC according to Article 23.2.2 WADC and that the IAAF was not allowed to include any substantial change to this provision, the Sole Arbitrator sees an obligation to understand Rule 40.8 2012-2013 IAAF Rules harmoniously with Article 10.8 WADC. For whatever reason, the fairness exception was not mentioned explicitly in the 2012-2013 IAAF Rules, but had nevertheless to be applied based on IAAF’s commitment

to Article 10.8 WADC. In a case, where the WADC did not allow for any substantial deviation of the IAAF Rules from the WADC, the provision of Rule 47.5 2012-2013 IAAF Rules, otherwise providing that “*in case of conflict between these Anti-Doping Rules and the Code, these Anti-Doping Rules shall prevail*” is not applicable. The Sole Arbitrator, as to Article 10.8 WADC, sees no room for a possible conflict between the 2012-2013 IAAF Rules and the WADC. The most favourable version of the IAAF Rules for the Athlete, at least in the circumstances of the present case, is therefore clearly the 2012-2013 version, whose application is further requested by the Athlete.

79. The 2012-2013 IAAF Rules, even if not yet in force on 3 March 2011 when the first sample for the Athlete’s ABP profile had been taken, with regard to Rule 39 and the relevant parts of Rule 40 word for word correspond to the 2010-2011 IAAF Rules, applicable in March 2011. The 2012-2013 IAAF Rules entered into force on 1 November 2011. Since the relevant provisions as laid down by the 2012-2013 IAAF Rules simply reproduce the provisions of the 2010-2011 IAAF Rules and remained in force until 1 November 2013, when they were replaced by the 2014-2015 IAAF Rules, which, however, as to the provisions mentioned above remained identical until 1 January 2015, the 2012-2013 IAAF Rules can be taken as reflecting the IAAF anti-doping regulations under the WADC.
80. Accordingly, the Sole Arbitrator finds that, since Samples 1 and 2 were taken in 2011 and since the IAAF Rules in force between 2011 and 31 December 2014 were the same in all material respects, the 2012-2013 version of the IAAF Rules can be taken for the applicable law with respect to violations and sanctions, being the *lex mitior*.

VII. PRELIMINARY ISSUE

81. On 17 June 2016, the Athlete filed certain requests for production of documents:
 1. The expert report produced by Dr. Schumacher regarding the Athlete’s ABP values dated 14 December 2014 as reference was made to this expert report in the First Expert Panel Report;
 2. The expert report produced by Prof. d’Onofrio regarding the Athlete’s ABP values dated 14 December 2014 as reference was made to this expert report in the First Expert Panel Report;
 3. The expert report produced by Prof. Audran regarding the Athlete’s ABP values dated 14 December 2014. Although no reference was made to this expert report in the First Expert Panel Report, it should be made available since it would be part of the evidence being used to charge the Athlete;
 4. Exhibits to the Joint Expert Opinion, as this should be available for evaluation by the Athlete’s expert;
 5. The IAAF documents and materials, including correspondence, related to the removal of the Athlete from Russia’s 2015 World Championship team in August 2015, as these

documents are relevant to determine why the Athlete was removed from the competition, but was not notified of the possible anti-doping charges against her until September 2015.

6. Copy of IAAF email dated 6 March 2012 to the Expert Panel, requesting comments on the Athlete's justifications, in order to verify if it was indeed a true and correct copy of the Athlete's justifications.
82. On 23 June 2016, the IAAF argued that these requests had been submitted out of time and made the following comments in respect of the individual requests:
- 1-3. The reports referred to are not part of the evidence against the Athlete; they are part of an internal results management process, which did not give rise to any disciplinary proceedings against the Athlete. Also, the reports consider a now outdated version of the ABP. Samples 12 and 13 had not been collected at the time, while Sample 12 bears the highest OFF-score in the Athlete's ABP.
 4. References are made to published and peer-reviewed articles. The fact that the Athlete and her expert are seeking production of all the published papers suggest that they have not made any independent attempt to obtain them.
 5. The Athlete's removal from the Russian team in the 2015 World Championship has no incidence on the issues before CAS or on the relief sought.
 6. The reference in the Joint Expert Opinion to the date on which the experts were provided with the Athlete's explanations (*i.e.* 6 March 2012) is clearly a typographical error.
83. Also on 23 June 2016, the Athlete made further remarks regarding the IAAF's comments and withdrew request no. 6.
84. As communicated to the parties by the CAS Court Office on 24 June 2016, the Sole Arbitrator considered that requests no. 1, 2 and 4 were likely to exist and to be relevant, but that the Athlete failed to sufficiently establish the relevancy of the documents requested in request no. 3 and 5.
85. Since Prof. d'Onofrio and Prof. Schumacher both referred to their previous reports in their part of the First Expert Panel Report of 10 and 14 December 2014 respectively, the Sole Arbitrator considered that these previous reports could indeed be relevant for the proceedings at hand and, contrary to the position of the IAAF, did form part of the file since both experts explicitly referred to their previous reports in concluding that the Athlete "likely" used doping. The Sole Arbitrator therefore considered it established that such previous reports existed and that they could be relevant, since these previous reports were also a qualitative interpretation of at least part of the Athlete's ABP.
86. Prof. Audran did not refer to a previous report in his part of the First Expert Panel Report. The Sole Arbitrator therefore did not consider request no. 3 to be sufficiently substantiated, so that this request was dismissed.

87. As to request no. 4, although the reference could indeed have been publicly available, the Sole Arbitrator considered it opportune to have these documents on file, particularly in order to enable counsel for the Athlete and the Sole Arbitrator to examine these documents, if necessary.
88. As to request no. 5, the Sole Arbitrator found that the discussion on whether or not the Athlete was validly excluded from Russia's team for the IAAF World Championships in 2015 fell outside the scope of the present arbitration. Indeed, this arbitration concerns the question of whether the Athlete violated Rule 32.2(b) of the IAAF Rules and not whether the IAAF is liable to pay damages in case the Athlete would be acquitted and/or was invalidly excluded from Russia's team, the Athlete further never requested that her constructive suspension should be credited in the event she would be found guilty, but even if such request would be considered as implied in her argumentation, it should not be followed for the reason expressed below at para. 177. The request for production of documents in this respect was therefore not considered relevant by the Sole Arbitrator.
89. The present arbitration is governed by the provisions applicable to the Appeal Arbitration Procedure of the CAS Code, pursuant to which counterclaims are no longer permitted since 2010 (CAS 2014/A/3707, para. 129 of abstract published on the CAS website: *"it must be noted at this stage that since the 2010 amendment of the Code, counterclaims (and cross-appeals) are no longer permitted in appeal proceedings. Specifically, Article R55 of the Code no longer stipulates that a respondent's answer should include any counterclaims"*).
90. This is also the reason that the Athlete's argument that she was unlawfully excluded from participating in the 2015 World Championships and that she would therefore be entitled to receive damages from the IAAF is dismissed.
91. Since the Athlete appealed neither her removal from the World Team nor her provisional suspension, also all her arguments as to violation of human rights in this context fall outside the scope of the present arbitration.

VIII. MERITS

92. As a result of the above, the main issues to be resolved by the Sole Arbitrator are:
- i. Did the Athlete violate Rule 32.2(b) of the 2012-2013 IAAF Rules?
 - a) Can the values of Sample 2, 6, 7, 8 and 12 be explained by training at high altitude or sleeping in hypoxic tents?
 - b) Can the values of Sample 4 and 5 be explained by a miscarriage in 2012 or subsequent surgeries?
 - c) Can the values of Sample 9 be explained by heavy menstrual bleeding?
 - d) Can the values of Sample 10 be explained by the intake of iron?
 - e) Can the values of Sample 11 be explained by a medication course?
 - f) Are Samples 1, 2 and 3 to be disregarded because of unknown validity?

- g) Which conclusion is to be drawn in the end?
 - 1. Submissions of the parties
 - 2. Findings of the Sole Arbitrator
 - ii. If an anti-doping rule violation was committed, what sanction shall be imposed on the Athlete?
- i) Did the Athlete violate Rule 32.2(b) of the 2012-2013 IAAF Rules?**

93. The Sole Arbitrator observes that the following general regulatory framework is relevant as to the merits of the case at hand.

94. The relevant parts of Rule 32 of the 2012-2013 IAAF Rules read as follows:

“RULE 32 Anti-Doping Rule Violations

1. *Doping is defined as the occurrence of one or more of the anti-doping rule violations set out in Rule 32.2 of these Anti-Doping Rules.*
2. *Athletes or other Persons shall be responsible for knowing what constitutes an anti-doping rule violation and the substances and methods which have been included on the Prohibited List. The following constitute anti-doping rule violations:*

[...]

(b) Use or Attempted Use by an Athlete of a Prohibited Substance or a Prohibited Method.

- (i) it is each Athlete’s personal duty to ensure that no Prohibited Substance enters his body. Accordingly, it is not necessary that intent, fault, negligence or knowing Use on the Athlete’s part be demonstrated in order to establish an anti-doping rule violation for Use of a Prohibited Substance or a Prohibited Method.*
- (ii) the success or failure of the Use or Attempted Use of a Prohibited Substance or Prohibited Method is not material. It is sufficient that the Prohibited Substance or Prohibited Method was Used, or Attempted to be Used, for an anti-doping rule violation to be committed”.*

95. Rules 33(1), (2) and (3) of the 2012-2013 IAAF Rules read as follows:

“RULE 33 Proof of Doping

1. *The IAAF, Member or other prosecuting authority shall have the burden of establishing that an anti-doping rule violation has occurred. The standard of proof shall be whether the IAAF, Member or other prosecuting authority has established an anti-doping rule violation to the comfortable satisfaction of the relevant hearing panel, bearing in mind the seriousness of the allegation which is made. This standard of proof in all cases is greater than a mere balance of probability but less than proof beyond a reasonable doubt.*

2. *Where these Anti-Doping Rules place the burden of proof upon the Athlete or other Person alleged to have committed an anti-doping violation to rebut a presumption or establish specified facts or circumstances, the standard of proof shall be by a balance of probability, except as provided in Rules 40.4 (Specified Substances) and 40.6 (aggravating circumstances) where the Athlete must satisfy a higher burden of proof.*

Methods of Establishing Facts and Presumptions

3. *Facts related to anti-doping rule violations may be established by any reliable means, including but not limited to admissions, evidence of third Persons, witness statements, expert reports, documentary evidence, conclusions drawn from longitudinal profiling such as the Athlete Biological Passport and other analytic information”.*
96. The Sole Arbitrator observes that in its attempt to establish an anti-doping rule violation of the Athlete under IAAF Rule 32.2(b), the IAAF relies on conclusions drawn from longitudinal profiling as shown by the Athlete’s ABP. The IAAF focusses on an abnormal sequence in HGB and OFF-score values in the Athlete’s ABP with a probability in excess of 99.9%, individual analyses of the Athlete’s ABP by the three members of the Expert Panel, the Joint Expert Opinion and the expert report of Dr. Sottas.
97. In the present case, the members of the Expert Panel, independent from each other, initially concluded as follows on the basis of the Athlete’s ABP, before any explanations were advanced by the Athlete:

Prof. Audran:

“The probabilities of abnormalities of HGB and OFFS sequences are > 99.9%. HGB value of sample 6 high and abnormal (specificity 99%), OFFS value of sample 9 low and abnormal (specificity 99%). There is a large variation in HGB values: from 129 g/l to 158 g/l, (29g/l, 22%), that seems a lot even in interval of 3 months, all the more these samples have been taken early in the morning. Excepted from sample 6, HGB values in samples taken OOC and far from competitions, samples 4, 5 and 10 are below or equal to 135 g/l while the HGB values in period of competition, excepted for sample 9, are > 145 g/l. This seems no physiologic as an increase of plasma volume is expected in period of competition. That is not true for sample 6 taken on 30/04 but there are competitions in June”.

Dr. Schumacher:

“I refer to my previous report on this profile (14.12.2014). I had highlighted the variability in haemoglobin (and to a lesser degree in reticulocytes) without clear pattern and had recommended further testing. In the most recent version of the profile, more tests have been conducted and a clear pattern is now visible: It appears that the athlete has usually higher haemoglobin values and lower reticulocytes (less evident) in summer than in winter, which is not physiological and points towards a supraphysiologically increased red cell mass during these periods (see for example samples 4, 5, 10, 11 for winter). I therefore conclude that this profile is indicative of doping involving an increase in red cell mass during summer”.

Prof. d'Onofrio:

"I evaluated this passport with a formal preliminary opinion dated 10-12-14 (with LDP). As a summary, the most suspicious sequence of results included samples 4 to 7. Samples 4 and 5, in particular, collected far from competitions (during fall 2012 and winter 2013), showed relatively low HGB value, within the expected range for a female athlete. Sample 6, taken three months later, showed a big increase in HGB (+2.9 g/dL, that is 22.5%). Sample 7, on 21-6-2013 on the eve of a race, was the most indicative of blood manipulation high HGB and decreased reticulocyte count (0.58%), causing an increased OFF value: this last is maintained in sample 8 (4-7-2013), again during the competition season. Samples 1, 2 and 3, in addition, also showed relatively high HGB values at the time of important international competitions in 2011. The recently added samples show similar abnormalities: ss. 10 and 11 are normal, while s. 12 shows again an OFF condition".

98. On 5 October 2015, upon being invited by the IAAF to provide an explanation for the alleged abnormalities in her ABP, the Athlete provided the following explanations:

"I, Sharmina Ekaterina, am ready to explain the deviation of the blood parameters in my athlete hematological passport.

Out of 10 presented results of blood tests (last three results are not yet received), only one case show marked deviation from the normal for one parameter – hematocrit 46.4%. All other blood test parameters are normal. To explain the reasons for differences in hemoglobin, hematocrit, and the stimulation index I have objective reasons.

In October 2012 I had a tragedy in my life. I could not carry a child. After surgery blood parameters such as hemoglobin and hematocrit decreased.

A month later my doctors diagnosed endometriosis (documents are attached). I had necessary treatment and iron supplements (Groprinasin, Unidox solutab, Terginan), which have side effects in the form of various pathological conditions and, primarily, state of anemia.

At the end of 2012 – early 2013 exactly such situations occurred. Information about the reception of these agents is presented in the accompanying documents and in the doping control form dated 18.01.2013. In the Spring of that year, the course of drugs was complete, and I started training again.

In January 2013 by the recommendation of the doctor of the national athletics team of Russia I had several courses permitted in our country hypoxotherapy with the use of hypoxic oxygen tent by the program of the Olympic Committee of the Russian Federation "Improving special training of athletes with means and methods of additional artificial hypoxic exposure". The project is implemented jointly with the Autonomous Non-Commercial Organization "Center of Biomedical Innovation" with the participation of specialists of the Russian State University of Physical Culture, Sport, Youth and Tourism (State Central Order of Lenin Institute of Physical Education – SCOLIPE).

Against the background of hypoxic treatment on the advice of the team doctor I took intravenous ferrum preparations 2 times / week 2.5mL and folium acid (Venofer and Medivitan). The level of ferrum in my blood increased. The corresponding analysis dated June 2013 are attached. Organisms reacted with the increase of hemoglobin and hematocrit. The highest hematocrit 46.4 was recorded during this period.

During the period before the World Championships Moscow (August 2013) I stopped using hypoxic tent and canceled (sic) the iron supplements as I have noted the aggravation of the disease. Due to heavy painful menstruation before the main start of the season I lost a lot of blood. Hematocrit and hemoglobin fell to a low for me values which ultimately did not allow me to show expected results on the World Championship.

In the received documentation my athlete hematological passport (VRA296K17) indicated 13 samples. But I got only 10 of them, as I informed you in my letters on September 30 and October 1, 2015.

I did not receive the results of the samples for 2014-2015. I could report the following for this period. During 2014 I underwent three surgical interventions, followed by administration of antibiotics – Groprinasin, Unidoks solutab (documents are attached). Antibiotics likely had impact on my blood parameters.

After treatment and rehabilitation my physical condition is improving. At the present moment I feel better and my blood tests show my usual values (hematocrit 45%, hemoglobin 150).

Please objectively analyse my case. I did not have any transfusions or some other manipulation with blood, did not use erythropoietin.

My mistake is that I did not provide proof of my natural high levels of hemoglobin and hematocrit, and that I did not notify All-Russia Athletic Federation about my health problems.

I hope for your understanding and objectivity”.

99. Taking into account these explanations of the Athlete, the Expert Panel concluded the following in its Joint Expert Opinion of 30 November 2015:

“In her declaration, the athlete claims that the following conditions have influenced her profile and caused the abnormalities indicated above:

- *A miscarriage in 2012 and endometriosis diagnosed on that occasion and several surgeries related to this condition (February 2014: Adhesions, hysteroscopy with curettage; March 2014: Laparoscopy with right ovariectomy; August 2014: Adhesions, hysteroscopy with curettage).*
- *The use of medication (antibiotics) and iron supplements to treat the condition mentioned above.*
- *The use of hypoxic training/exposure from January 2013 onwards with i.v. iron therapy. The technique was stopped in August 2013 due to side effects.*
- *Heavy menstrual bleeding “before the start of the main season” (no date specified) in 2013.*
- *Natural high haemoglobin levels around 15g/dl.*

In the following, we will evaluate each point in the light of the profile and considering the available scientific evidence.

Miscarriage, endometriosis, surgeries

The above mentioned conditions can, in theory, lead to an increased blood loss and thereby influence the blood profile. The surgical reports provided by the athlete document the blood loss for the three different surgeries: Both

Hysteroscopies caused 30ml of blood loss and the Hysterectomy 5ml, (although we doubt that the 5ml for the hysterectomy is correct, it was probably more). For comparison, a typical blood test performed for health reasons with one serum and one EDTA sample is about 10ml. It is therefore clear that a blood loss of 30ml will not have any significant impact on the blood measures or the blood profile. By no means, a loss of 30ml will influence the blood markers to fail individual reference limits. It should be added that the blood test closest to the surgery was obtained on 24.4.2014, thus more than 1 month after the last intervention. This blood test displays normal values for a female athlete with normal reticulocytes, thus no sign of compensatory marrow activity. It can thus be assumed that any blood lost during the surgeries has long been replaced. This timeframe has also been demonstrated for various conditions of blood loss or blood donation in scientific studies, where significant losses (~500-~2000ml) were compensated within 20-36 days (1,2). It should also be added that the most suspicious samples in the present profile show features of a supraphysiologically elevated red cell mass, not a low red cell mass, such as observed after a period of bleeding.

Therefore, the surgeries performed on the athlete are unlikely to have had a relevant impact on the blood profile and cannot explain any of the abnormalities described above.

Medication, iron supplements

Iron and folic acid are important substrates of the blood cell synthesis and their deficiency will lead to insufficient erythropoiesis (3,4). This situation usually presents clinically as anaemia (low haemoglobin) with typical features in the red blood cell indices (low MCV for iron deficiency, high MCV for folate deficiency). In the present athlete however, neither anaemia nor any abnormality in the red cell indices is visible in the profile. Thus, it is highly unlikely that the athlete suffered of any deficiency. In the healthy athlete without any insufficiencies, it is also well proven in the scientific literature that additional supplementation / excess of vitamins, minerals, iron or folic acid will not cause any clinically relevant changes in the red blood cell picture (5,6).

Supplementation of iron or folic acid as a cause of abnormalities of the profile can therefore be dismissed.

The athlete also claims that the use of various other medications (Groprinasin (Inosine Pranobex, an immunostimulant), Unidoks (Doxycycline, an antibiotic) has impacted her blood profile. In the scientific literature, there is not any documentation about potential haematological side effects of the former substance (Inosine Pranobex). For Doxycycline, there is documented evidence that in very rare cases, the substance can have haematological side effects, which involve haemolytic anaemia, thrombocytopenia and disturbances in the development of certain cells of the white lineage. Considering the profile in light of these effects, it is obvious that the athlete has never been anaemic throughout the profile and there is nowhere any sign of compensation with increased reticulocytes etc. Furthermore, looking at the timeframe of the administration of these substances (declared around the surgery dates), it appears highly unlikely that they have any impact on the blood samples in the profile, as the only sample taken in 2014 (the year of the doxycycline therapy) was taken more than 1 month after the last administration.

It is also unlikely that any of the other substances administered perioperatively (see surgical reports) has had any lasting impact on the blood profile for the reasons given above and the fact that the most abnormal features of the profile are present long before the surgeries in 2014.

In summary, it is therefore highly unlikely that the supplementation or the medication used by the athlete had any effect on her blood profile which would be of relevance for her Athlete Biological Passport.

Hypoxic devices/training

It is recent studies have documented that the hypoxia of altitude can cause changes in markers of the athlete biological passport (7,8). However, the magnitude of such changes is generally small and will cause distinct patterns in the blood profile. Typically, reticulocytes are slightly suppressed approximately 10 days after return to sea level, paired with possibly mildly elevated haemoglobin levels, leading to a slight increase in OFF score. However, when relating the profile to the alleged use of hypoxia (allegedly January 2013-August 2013, stopped prior to the World Championships), many different patterns are visible: Relatively low haemoglobin concentrations with high reticulocytes (9.8.2013, taken just before the World championships), high haemoglobin with low reticulocytes (21.6.2014), low haemoglobin with low reticulocytes (18.1.2014). Given the relatively predictable changes usually caused by hypoxic exposure, it is unlikely that the variations seen in the profile have been caused by hypoxia alone. The aforementioned adaptations and changes pertain to natural altitude with sufficient duration of exposure (see below). Using a hypoxic tent or other forms of artificial hypoxia can induce similar changes than natural hypoxia (altitude). However, most of the time, the daily exposure time in the tent is too short to trigger measurable increases in erythropoiesis. This has been investigated in several scientific studies (9, 10). Generally, it is believed that, depending on the degree of hypoxia, 10 of ore hours of continuous exposure at are required to increase erythropoiesis.

In summary, it is obvious that the abnormalities in the profile are highly unlikely to have been caused by any form of altitude or hypoxic exposure alone.

Menstrual bleeding

The athlete states that “heavy painful menstruation before the main start of the season” has led to a significant blood loss, which might have caused the fluctuations in her profile.

During normal menstruation, approximately 40ml of blood is lost (11). This translates to haemoglobin variations of about 0.7g/dl (12). Interestingly, the observed changes in haemoglobin are mostly attributed to hormone induced plasma volume shifts and not to true variations in red cell mass. Thus, the variation caused by the monthly bleeding is not very important and certainly smaller than the variations that are usually induced by plasma volume shifts caused by exercise.

Heavy menstruation (menorrhagia) can cause blood losses of 80ml or more (11). The haemoglobin concentration of the blood can be affected, but only at persistent monthly losses of > 80ml. The magnitude of the association between menstrual blood loss and haemoglobin concentration ranges around -1g/dl for subjects who lose more than 80ml regularly, thus way below of what is seen in the present profile. As mentioned above, heavy bleedings of any origin in general can, theoretically, lead to persistently low haemoglobin values, especially if iron stores are depleted. According to the data provided by the athlete however, her iron stores were not low but even very high at times (see athletes documentation page 8). Furthermore, in the present profile, low haemoglobin values are never the problem: The samples deemed as suspicious in the profile (see page 1 of this report) display high haemoglobin values and rather low Reticulocytes.

Therefore, the argument forwarded by the athlete and her defence that menstrual disturbances have partly caused the abnormalities visible in the profile is not supported by the scientific evidence.

Natural high haemoglobin

The athlete claims to have naturally elevated haemoglobin values around 15g/dl (normal range for females between 12 and 15g/dl). Thus, about 2,5% of the female population will have haemoglobin values of 15g/dl

or higher. In the present case however, there is no evidence for naturally elevated haemoglobin concentrations: In fact, haemoglobin values close to 15g/dl only seem to occur during the summer months / in vicinity of major competitions. This is illustrated in the figure below, where haemoglobin values are related to the months of the year.

The values observed in winter (November, December, January, outside of the competitive season) are much lower. We therefore think that naturally high haemoglobin is not present in the profile and that the argument provided by the athlete should be dismissed.

Conclusion

Based on scientific scrutiny of the different points forwarded by the athlete, we do not think that any of the arguments explain the abnormalities of the profile.

Considering the information available at this stage, we therefore confirm our previous opinion that the profile is highly suspicious for blood manipulation. It is highly unlikely that it is the result of a normal physiological or pathological condition but might in contrast be caused by the use of prohibited substances or prohibited methods”.

100. The Athlete, in her Answer, basically reiterated the arguments advanced in her letter with explanations for the alleged abnormalities in her ABP. She provided more information about her training at high altitude and that this may have resulted in deviations in her blood values. The Athlete also specified that the blood loss particularly occurred as from November 2012.
101. The Athlete, in her Amended Answer, held against the opinions expressed by the members of the Expert Panel however arguments, which mainly rely on the expert opinion of Dr. Faber. Dr. Faber provided the following summary of his expert report:

“This report is largely devoted to revealing serious flaws underlying the current handling of the (private) data collated in the Athlete Biological Passport (ABP):

1. *So-called abnormality of individual data points and entire profiles is overstated;*
2. *These overstated values are compared to a norm (99.90%) that is tenfold less stringent (!) than the one established in conventional testing, namely 99.99%;*
3. *The prosecution experts reviewing the profiles severely violate a widely-accepted forensic principle by making statements about the likelihood of a hypothesis;*
4. *The prosecution experts make verbal (i.e. non-numerical) statements (e.g. ‘highly likely’) which in itself should be troublesome for a decision maker;*
5. *These verbal statements, when being transformed to their numerical counterparts, turn out to be too weak for deciding in a doping case.*

A relatively small part of this report is devoted to the current interpretation of Ms. Sharmina’s ABP. Correct interpretation is obviously troubled by the relative paucity of reliable data. With only 13 observations over a period of roughly 4 years (!), of which 3 (!) of unknown validity, essentially leaving 10 observations over a

period of roughly 3 years (!), it is e.g. virtually impossible to reliably estimate a baseline against which potential outliers should be compared.

It is argued that both hypotheses, i.e. the one advanced by the prosecution as well as the one advanced by the defense, lack sufficient support to choose, leaving the innocence presumption as the only viable option”.

a) Can the values of Samples 2, 6, 7, 8 and 12 be explained by training at high altitude or sleeping in hypoxic tents?

102. The Athlete maintains that in March 2013 she trained at an altitude of approximately 1,200 meter, in April 2013 at an altitude of approximately 800 meter and used an hypoxic tent at night in April and/or May 2013 resembling an altitude of approximately 3,000 meter. The Athlete submits that when descending from the mountains reticulocyte levels are suppressed and HGB values are increased. Sample 6 was taken out of competition, whereas Sample 7 and 8 were taken on a peak of her form after having descended from the mountains or hypoxic training.

103. The Athlete makes similar submissions in respect of Sample 2, that was apparently taken after a training period of 8 weeks in April and May 2011 at an altitude of approximately 1,200 meter, and Sample 12, that was apparently taken after a training period of 4 weeks in March 2015 at an altitude of approximately 1,200 meter, a period of training in April 2015 at an altitude of 2,000 meter, a period of training in May 2015 at 700 meter plus the use of an hypoxic tent resembling an altitude of approximately 3,000 meter. Sample 12 was taken on the day following a 12-hour intercontinental flight.

104. The Expert Panel agrees with the argument of the Athlete insofar as it is contended that reticulocytes are suppressed after return to sea level and that haemoglobin levels may slightly increase. However, the Expert Panel makes the following important nuance in this respect:

“Typically, reticulocytes are slightly suppressed approximately 10 days after return to sea level, paired with possibly mildly elevated haemoglobin levels, leading to a slight increase in OFF score. [...] Given the relatively predictable changes usually caused by hypoxic exposure, it is unlikely that the variations seen in the profile have been caused by hypoxia alone”.

105. A similar argument is made in respect of the use of an hypoxic tent. Although the Expert Panel agrees that “[u]sing a hypoxic tent [...] can induce similar changes than natural hypoxia (altitude)”, the Expert Panel adds that “most of the time, the daily exposure time in the tent is too short to trigger measurable increases in erythropoiesis. [...] Generally, it is believed that, depending on the degree in hypoxia, 10 or more hours of continuous exposure [...] are required to increase erythropoiesis”.

106. The Expert Panel therefore concludes that “[i]n summary, it is obvious that the abnormalities in the profile are highly unlikely to have been caused by any form of altitude or hypoxic exposure alone”.

107. The Sole Arbitrator concludes from the above that even if the Athlete had used an hypoxic tent in April and/or May 2013 and in May 2015, resembling an altitude of approximately 3,000 meter, still this would not influence the Athlete’s blood values on 21 June 2013 (Sample 7), 4 July 2013 (Sample 8) and 18 June 2015 (Sample 12) to such an extent that it could have had a

significant impact on these values. As confirmed by the Expert Panel, haemoglobin levels may be mildly elevated for approximately 10 days after return to sea level. As such, the Sole Arbitrator is not convinced that the use of an hypoxic tent by the Athlete influenced the blood values of Sample 7, 8 and 12, as these samples were taken at least 21, 34 and 18 days respectively after the Athlete allegedly ceased using an hypoxic tent.

108. During the hearing Prof. d’Onofrio added that after a return from significant height (*e.g.* at 2,000 meter for about 10 days), you may get OFF-score variations up to about 10%. However, the OFF-score variation in the Athlete’s ABP is up to 40%. In this analysis, Prof. d’Onofrio also took into account that when a sample is taken an athlete is asked to answer a number of questions, among which whether the athlete has been exposed to altitude (natural or simulated) in the two weeks prior to sample collection, but that for example, in respect of Sample 7, the Athlete did not indicate that she had been exposed to altitude.
109. Dr. Schumacher confirmed the conclusion of Prof. d’Onofrio by adding that there might be a variation, but not to a big magnitude. Also frequent flying at high altitude does not lead to significant changes, as the pressure in an airplane on an intercontinental flight of 8 – 10 hours duration simulates an altitude of about 1,200 meter, which falls within a regular daily variation.
110. On the basis of the above information, the Sole Arbitrator finds that the Athlete’s explanations for the allegedly abnormal blood values in certain samples of her ABP are not significantly influenced by her training or stay at high altitude, to such an extent that it would justify doubts about the conclusions reached by Prof. d’Onofrio and Dr. Schumacher in the Joint Expert Report.
111. Furthermore, the Sole Arbitrator took due note of the fact that the Athlete’s submissions in her Answer and in her witness statement enclosed to the Amended Answer about her whereabouts in the relevant period (*“In 2013, I was again training in Kislovodsk in March, April and May [...]”*) do not correspond to the whereabouts information detracted from ADAMS (from which it derives that the Athlete only stayed in Kislovodsk from 13 to 15 March 2013). The other towns where the Athlete stayed in March, April and May 2013 are not in the close proximity of Kislovodsk.
112. The Sole Arbitrator considers the arguments advanced by the Athlete to justify the inconsistencies between her statements in the present arbitration and the information derived from ADAMS (*“[s]he did not receive clear instructions as to how to use the system”, “it was common practice at ARAF that athletes supplied the information about their respective whereabouts to an ARAF official”, “[the Athlete] never felt it was necessary to diligently confirm the veracity of the data entered by the [ARAF official]”*) not satisfactory in order to deviate from the general principle under the WADA/IAAF anti-doping system that an athlete is responsible for her own actions.
113. The Sole Arbitrator further notes that, even considering the Athlete’s difficulties to produce the respective documentation after such long time, the Athlete did not submit any corroborating evidence to prove where she stayed and trained during the relevant period. The Athlete could have submitted evidence by means of receipts, tickets, witnesses, to support her argument that she indeed stayed and trained at high altitude.

114. In the absence of such evidence being provided and considering also the statements of Prof. d'Onofrio and Dr. Schumacher that, even if the Athlete would have trained at high altitude, this would still not have entirely explained the inconsistencies in her ABP, the Sole Arbitrator finds, on a balance of probability, that the Athlete could not rebut the establishment of the expert opinion of the Expert Panel in respect of Samples 2, 6, 7, 8 and 12.

b) *Can the values of Samples 4 and 5 be explained by a miscarriage in 2012 or subsequent surgeries?*

115. The Athlete maintains that the alleged abnormal values of Samples 4 and 5 can be explained by a miscarriage that she underwent in 2012 and subsequent surgeries. The Athlete maintains that she suffered from regular bleedings since November 2012 and that these bleedings may have reduced her haemoglobin levels in Samples 4 and 5.

116. The Expert Panel again agreed with the Athlete that “[i]n the above mentioned conditions can, in theory, lead to an increased blood loss and thereby influence the blood profile”. However, the conclusions of the Athlete are nevertheless dismissed by the Expert Panel as the surgical reports provided by the Athlete indicate that both Hysteroscopies caused a blood loss of 30ml and the Hysterectomy 5ml. Even taking into account that the blood loss related to the Hysterectomy was probably more than 5ml, the Expert Panel maintains that a blood loss of 30ml “will not have any significant impact on the blood measures or the blood profile. By no means, a loss of 30ml will influence the blood markers to fail individual reference limits. It should be added that the blood test closest to the surgery was obtained on 24.4.2014, thus more than 1 month after the last intervention. This blood test displays normal values for a female athlete with normal reticulocytes, thus no sign of compensatory marrow activity. It can thus be assumed that any blood lost during the surgeries has long been replaced”.

117. The Sole Arbitrator observes that, despite the fact that the Joint Expert Opinion was provided to the Athlete, the Athlete did not argue that the assumption of the Expert Panel regarding her blood loss (not more than 30 ml per operation) was incorrect.

118. The Sole Arbitrator finds that the expert conference during the hearing did not bring to light any additional relevant reflections or opinions.

119. In view of the above, the Sole Arbitrator finds, on a balance of probability, that the Athlete could not rebut the establishment of the expert opinions in respect of Samples 4 and 5.

c) *Can the values of Sample 9 be explained by heavy menstrual bleeding?*

120. The Athlete maintains that she had quite severe menstrual bleeding in the beginning of August 2013, that approximately stopped at 5 August 2013 and that she stopped using iron supplements before the IAAF World Championships in Moscow in August 2013.

121. In respect of menstrual bleedings, the Expert Panel agrees with the Athlete that “[h]eavy menstrual bleedings (menorrhagia) can cause blood losses of 80ml or more” and that “heavy bleeding of any origin in general can, theoretically, lead to persistently low haemoglobin values, especially if iron stores are depleted”. However, notwithstanding the above, the Expert Panel dismisses the Athlete’s conclusion that

her menstrual bleeding have partly caused the abnormalities visible in the profile. To this effect, the Expert Panel argues that “[i]nterestingly, the observed changes in haemoglobin are mostly attributed to hormone induced plasma volume shifts and not to true variations in red cell mass”, “[t]he magnitude of the association between menstrual blood loss and haemoglobin concentration ranges around -1g/dl for subjects who lose more than 80ml regularly, thus way below of what is seen in the present profile”. Particularly in respect of the alleged low iron levels of the Athlete in combination with heavy menstrual bleeding, the Expert Panel argues that “[a]ccording to the data provided by the athlete however, her iron stores were not low but even very high at times (see athletes documentation package 8). Furthermore, in the present profile, low haemoglobin values are never the problem: The samples deemed as suspicious in the profile (see page 1 of this report) display high haemoglobin values and rather low Reticulocytes”.

122. The Sole Arbitrator observes that, despite having been provided with the Joint Expert Opinion, the Athlete did not argue that the assumption of the Expert Panel regarding her iron levels (not low but even very high at times) was incorrect.
123. The Sole Arbitrator finds that the Athlete did not provide sufficient evidence in order to explain to a balance of probability the contradiction shown by the Expert Panel between the haemoglobin level and amount of iron in Sample 9 and that these values are caused by heavy menstrual bleeding of the Athlete. Even if the low level of haemoglobin taken alone could be explained by heavy menstrual bleeding, which the experts conceded at the hearing, the value of haemoglobin does not fit to the value of iron in Sample 9. As a consequence, the Athlete could not rebut the establishment of the expert opinions in respect of Sample 9.

d) *Can the values of Sample 10 be explained by the intake of iron?*

124. The Athlete argues that the heavy menstrual bleedings caused a lack of iron and that she therefore administrated iron. The Athlete submits that “*Sample No. 10 has been taken 12/19/2013 on collecting in Portugal, and after return to Russia I have made the test which experts didn’t begin to take in attention. Though they have considered analyses of iron from the same laboratory*”. Although not entirely comprehensible, the Sole Arbitrator understands that the Athlete intends to say that her lack of iron affected the blood values of Sample 10.
125. In this respect the Expert Panel concluded that “[a]ccording to the data provided by the athlete however, her iron stores were not low but even very high at times (see athletes documentation package 8)”, which assumption remained uncontested by the Athlete.
126. In view of the above, the Sole Arbitrator finds, on a balance of probability, that the Athlete could not rebut the establishment of the expert opinions in respect of Sample 10.

e) *Can the values of Sample 11 be explained by a medication course?*

127. The Athlete maintains in her Answer that “[i]n January 2014, I laid down in clinic on inspection, in February and March 2014 I took a girudorepiya course”.
128. Although the Athlete did not establish any link between the “girudorepiya” course and Sample 11, the Sole Arbitrator understands that the Athlete tries to establish that they are related

because she argues that she underwent the course in February and March 2014, since Sample 11 was taken in April 2014 and because the Athlete finds that Sample 11 should not be taken into account in her ABP.

129. The Sole Arbitrator notes that the “girudorepiya” course was not put forward by the Athlete in her initial explanations as the alleged abnormal values of her ABP in her letter to the IAAF dated 5 October 2014 and was therefore not discussed by the Expert Panel in the Joint Expert Opinion.
130. The Sole Arbitrator finds, on a balance of probability, that the Athlete could not rebut the establishment of the expert opinions in respect of Sample 11, particularly since the Athlete failed to clarify, or even briefly indicate, what such course exactly entails and what the consequences of such course may have been on her blood values.

f) *Are Samples 1, 2 and 3 to be disregarded because of unknown validity?*

131. The Athlete maintains, with reference to the expert report of Dr. Faber, that Samples 1, 2 and 3 are to be disregarded because these samples are of unknown validity. The Athlete finds that an ABP cannot be based on only thirteen samples and that if three of these thirteen samples would be disregarded, a number of ten samples is clearly insufficient. Dr. Faber considers that with “*10 observations over a period of roughly 3 years (!), it is e.g. virtually impossible to reliably estimate a baseline against which potential outliers should be compared*”.
132. Since this argument was only advanced for the first time in the Athlete’s Amended Answer, the Expert Panel could not take this into account in its Joint Expert Opinion. The issue was, however, discussed between the experts during the hearing.
133. Dr. Sottas maintained that it is perfectly normal that the Athlete’s ABP indicates that the validity of Samples 1, 2 and 3 is “unknown”. According to Dr. Sottas, this is related to an administrative issue. Before 2012 it was not mandatory for a laboratory to register the time of receipt of the sample. The samples were obviously received by the laboratory, but there was no requirement for the time to be added. It however does not derive from the documentation package that there were any abnormalities regarding the receipt of Samples 1, 2 and 3 by the laboratories based on which the samples should be declared invalid.
134. As to the other reference to “unknowns” in the Athlete’s ABP, Dr. Schumacher explained that this is related to hemodilution. If a sample is taken after heavy competition, the haemoglobin values may be low. This is however not the case here as the haemoglobin levels of the Athlete in these samples were quite high.
135. The Sole Arbitrator finds the explanations of Dr. Sottas and Dr. Schumacher convincing, particularly also in view of the fact that the Athlete did not advance any specific argument based on which Samples 1, 2 and 3 should be declared invalid, besides the argument that the validity was “unknown”. The Sole Arbitrator finds that “unknown” can however clearly not be put on the same footing as “invalid” and more substantial arguments would have been required in order to disqualify these samples from being adopted in the Athlete’s ABP.

136. The Sole Arbitrator finds, on a balance of probability, that the Athlete could not rebut the establishment of the expert opinions in respect of the validity of Samples 1, 2 and 3.

g) Which conclusion is to be drawn in the end?

137. In view of the above conclusions, the Athlete's ABP remains as it is; no samples are excluded. The Athlete's ABP is therefore to be analysed taking into account all 13 samples that it is comprised of.

1. Submissions of the parties

138. As indicated *supra* at para. 94, Dr. Faber contests several aspects of the ABP system in general in his expert report.

139. Dr. Faber maintains that it is very important how abnormality is determined and to be aware what the numbers represent. For conventional doping testing a specificity of 99.99% is used, *i.e.* a norm tenfold stricter than the 99.9% specificity used for the ABP. Dr. Faber submits that “[f]or a basic scientist it is disappointing to see that one major part of the anti-doping community (ABP) does not know what reasonable conclusion on a significant issue has been arrived at by another major part ([Human Growth Hormones]) more than a decade ago”.

140. Dr. Faber holds that, even with a specificity of 99.99%, about every two weeks a “clean athlete might complain for a good reason but without a real defense”, considering that about 250,000 to 300,000 samples are analysed. Dr. Faber argues that, although one could consider that outcome as too much ‘collateral damage’, the 1 in 10,000 standard could indeed be considered an acceptable compromise for the price one must be willing to pay for clean sport. With reference to CAS 2011/A/2566 where the CAS panel determined that it was not its task to evaluate whether a specificity of 99.99% was appropriate since none of the parties had contested it, Dr. Faber argues that “one cannot ignore the fact that the current evaluation of the data collated in the ABP allows for a tenfold higher risk of a false-positive declaration than previously agreed in conventional testing, *i.e.* 1 in 1000 instead of 1 in 10,000. While both being (equally) reliable means?”

141. Dr. Faber also maintains that the three experts constituting the Expert Panel should not make statements about the likelihood of a hypothesis. According to Dr. Faber interpretation is only meaningful when two or more competing propositions are addressed and the role of the expert then is to consider the probability of the evidence given the propositions that are addressed. Doing otherwise would lead to a “prosecutor’s fallacy”. Dr. Faber concludes by stating that “expert witnesses must limit themselves to providing the probability that one observes some data, given a scenario, instead of claiming to know the likelihood of a scenario, given some data”.

142. Finally, Dr. Faber submits that in literature the following conversion is made between verbal statements regarding chance and numerical chance:

Verbal	Numerical
Practically proved	0.9980-0.9990
Extremely likely	0.9910-0.9979
Very likely	0.9500-0.9909
Likely	0.9000-0.9499
Undecided	0.8000-0.8999
Not useful	Less than 0.8000

143. On the basis of this table, and arguing that the standard of “highly likely” may be equated to “very likely”, Dr. Faber maintains that this designation implies that something goes wrong in 1-5% of the cases. Recalling that roughly 250,000 to 300,000 samples are analysed annually, according to Dr. Faber this would lead to something going wrong in roughly 2,500 to 15,000 cases.
144. In addition to Dr. Faber’s expert report, the Athlete maintains that she has naturally elevated levels of haemoglobin.
145. In respect of Dr. Faber’s criticism on the Adaptive Bayesian Model, Dr. Sottas maintains the following:

“[a]s a preliminary matter, it is important to understand that the ABP uses the athlete as his/ her own reference with the deviation of individual limits, and not population ranges. [...] In the ABP, it is the Adaptive Bayesian Model that is used to detect atypical values. [...] It is important to understand that the ABP is not just about sanctioning an athlete based on an “algorithm”. In practice, a value or sequence of values deemed atypical by the Adaptive Model triggers the evaluation of the athlete’s passport by a panel composed of three experts in the field of sport physiology, blood doping and clinical haematology. The result of the Adaptive Model cannot be used as sole evidence of doping, because an Atypical Passport Finding “just” suggests that it is unlikely that the passport is the result of a normal physiological condition”.

146. In respect of the criticism on the specificity used for the ABP, Dr. Sottas maintains that the report of Dr. Faber uses the analogy of the decision limit for Human Growth Hormone in order to substantiate his thesis, while stating the following:

“I strongly disagree with the contention and the validity of the analogy used to support it. If an athlete exceeds the decision limit for Human Growth Hormone, that automatically constitutes an Adverse Analytical Finding and, absent a departure from the relevant standards or the existence of a TUE, will necessarily result in an anti-doping rule violation. This is not at all the case with the ABP. As mentioned above, atypical values (or sequences) will trigger an expert review. If the expert panel ultimately concludes that it is highly likely that a Prohibited Substance or Prohibited Method has been used and unlikely that the values are the result of any other cause, an Adverse Passport Finding (APF) will be declared (see WADA ABP Operating Guidelines). The Athlete will then be asked to provide his/ her explanations for the APF; an anti-doping rule violation will only be asserted if the expert panel confirms its previous conclusion after review of the athlete’s explanations. In short, the specificity of the ABP – whether 99% or 99.9% - acts only as a trigger for a review by experts. This is entirely different from a decision limit which, when exceeded, automatically constitutes an Adverse Analytical Finding”.

147. The Expert Panel concludes the following in its Joint Expert Report in respect of the argument of the Athlete that she has naturally elevated levels of haemoglobin:

“The athlete claims to have naturally elevated haemoglobin values around 15g/dl (normal range between 12 and 15g/dl). Thus, about 2.5% of the female population will have haemoglobin values of 15g/dl or higher. In the present case however, there is no evidence for naturally elevated haemoglobin concentrations: In fact, haemoglobin values close to 15g/dl only seem to occur during the summer months / in vicinity of major competitions. [...] The values observed in winter (November, December, January, outside the competitive season) are much lower. We therefore think that naturally high haemoglobin is not present in the profile and that the argument provided by the athlete should be dismissed”.

2. Findings of the Sole Arbitrator

148. Commencing with the analysis of the arguments set out above, the Sole Arbitrator observes that the ABP has been generally accepted as a reliable and accepted means of evidence to assist in establishing anti-doping rule violations (see CAS 2010/A/2174, para. 9.8; VIRET M., Evidence in Anti-Doping at the Intersection of Science and Law, 2016, p. 735; LEWIS/TAYLOR (Eds.), Sport: Law and Practice, 2014, para. C.126).
149. This is not to say that no criticism on the ABP is permitted or that the reliability of the evidence provided by the ABP in a specific case cannot be reproached, it is however at least indicative that the credibility of the ABP system as a whole is not to be mistrusted easily. The Sole Arbitrator hence finds that the ABP system is to be presumed valid, unless convincing arguments are made that a specific element of the system does not operate satisfactorily.
150. The Sole Arbitrator is mindful of the warnings expressed in legal literature that a pitfall to be avoided is the fallacy that if the probability of observing values that assume a normal or pathological condition is low, then the probability of doping is automatically high (VIRET M., Evidence in Anti-Doping at the Intersection of Science and Law, 2016, p. 763, with further references to Dr. Schumacher and Prof. d’Onofrio 2012, p. 981; Sottas 2010, p. 121) and that it has been submitted in this context that *“if the ADO is not able to produce a “doping scenario” with a minimum degree of credibility (“density”), the abnormality is simply unexplained, the burden of proof enters into play and the ADO’s case must be dismissed since there is no evidence pleading in favour of the hypothesis of “doping” any more than for another cause”* (VIRET M., Evidence in Anti-Doping at the Intersection of Science and Law, 2016, p. 774).
151. This view has indeed also been adopted in CAS jurisprudence and the Sole Arbitrator finds that another CAS panel summarised it nicely by stating that *“abnormal values are (for the purposes of the ABP) a necessary but not a sufficient proof of a doping violation”* (CAS 2010/A/2235, para. 86). Although such panel continued by emphasising that it is not necessary to establish a reason for blood manipulation, the panel noted the coincidence of the levels with the athlete’s racing schedule and stated the following:

“As Dr. Sottas convincingly explained, in the same way as the weight of DNA evidence said to inculpate a criminal is enhanced if the person whose sample is matched was in the vicinity of the crime, so the inference to

be drawn from abnormal blood values is enhanced where the ascertainment of such values occurs at a time when the Athlete in question could benefit from blood manipulation” (CAS 2010/A/2235, para. 102).

152. The Sole Arbitrator agrees with these considerations and, as such, concludes that from the mere fact that an athlete cannot provide a credible explanation for the deviations in his or her ABP it cannot automatically be deduced that an anti-doping rule violation has been committed. Rather, the deviations in the ABP are to be interpreted by experts called to put into the balance various hypothesis that could explain the abnormality in the profile values, *i.e.* a distinction is made between a “quantitative” and a “qualitative” assessment of the evidence.
153. It is against this background that the Sole Arbitrator will assess the arguments of the Athlete and Dr. Faber.
154. Commencing with the argument of Dr. Faber that the sensitivity of 99.9% used by the IAAF for “flagging” abnormal values in an ABP is not appropriate, the Sole Arbitrator finds that not much more can be added to the clear and convincing expert report of Dr. Sottas in this respect. The Sole Arbitrator considers it obvious that an Adverse Analytical Finding does not have the same consequences as an Adverse Passport Finding. Whereas the former necessarily constitutes an anti-doping rule violation as long as no departure from the relevant standards or the existence of a therapeutic use exemption is established, the latter only triggers the analysis of the ABP by an expert panel, *i.e.* the ABP is an indirect detection method, as opposed to the so-called direct detection methods (MAVROMATI D., *The Athlete’s Biological Passport (ABP) Programme*, Bulletin TAS – CAS Bulletin, 2/2011, p. 36).
155. In fact, the Sole Arbitrator observes that although article 2 first paragraph of Appendix E to the ABP Operating Guidelines determines that “[o]utliers correspond to those values out of the 99%-range (0.5 – 99.5 percentiles)”, the IAAF voluntarily maintains a higher specificity of 99.9%, than the sensitivity required.
156. The Sole Arbitrator considers the two-stage assessment of an ABP by scientific experts before charging an athlete with an anti-doping rule violation to be a sufficient warranty to prevent the number of false positives from being intolerably high. The Sole Arbitrator became particularly convinced in this respect by the statement of Prof. d’Onofrio during the hearing when he stated that he estimates that out of every 10 ABP cases that are submitted to his review, 2 ABPs are considered perfectly normal, 6 are considered suspicious (with the consequence that these athletes are not charged with an anti-doping rule violation but are submitted to further testing) and that he only concludes in 2 out of every 10 cases that the ABP is likely caused by doping (with the consequence that the athlete in question is requested to provide an explanation for his allegedly abnormal ABP values, following which the case is submitted to the scrutiny of the a three-person expert panel that needs to be of the unanimous opinion that the ABP is likely caused by doping before the athlete is actually charged).
157. Hence, the Sole Arbitrator is not convinced by the arguments of Dr. Faber that the sensitivity used by the IAAF based on which abnormal values in an ABP are flagged provides for insufficient warranties, particularly since a charge filed on the basis of an ABP is not based only

on statistical information, but is indeed only pursued following a qualitative assessment of all the information available.

158. Since the Adaptive Model “*predicts for an individual an expected reference range within which a series of Marker values falls assuming a normal physiological condition*” (article 2 first paragraph of Appendix E to the Athlete Biological Passport Operating Guidelines), a false positive flag does not necessarily entail the athlete being charged with an anti-doping rule violation. The Sole Arbitrator therefore considers the calculations made by Dr. Faber, according to which there are allegedly “*things going wrong in roughly 2,500 to 15,000 cases*” per year, misleading and misplaced.
159. The Sole Arbitrator finds that Dr. Faber’s conclusion that the conversion between numerical and verbal chances in respect of the ABP is not appropriate, must be dismissed for the same reason, as Dr. Faber appears to presume that athletes are charged for an anti-doping rule violation based on a quantitative assessment of the ABP only, but does not take into account that the flagged ABPs are further filtered by means of a qualitative assessment by a group of experts.
160. As to the argument of the Athlete that the ABP consists of too little samples to constitute a reliable basis to estimate a reliable baseline against which potential outliers should be compared, the Sole Arbitrator finds that this argument is to be dismissed. The ABP Operating Guidelines do not determine that an ABP must consist of a certain minimum number of samples before an athlete can be charged. As confirmed by Prof. d’Onofrio during the hearing, the Athlete’s ABP did not consist of less samples in comparison with other ABPs and he felt comfortable issuing an opinion about an ABP with less than 13 samples. Also Dr. Schumacher confirmed that, from a statistical point of view, after two samples 80% of the uncertainty is taken away and that he could make an assessment on the basis of much less samples than 13.
161. As to the Athlete’s comparison between the alleged values in the ABP of a well-known British athlete and the values in the Athlete’s ABP, the Sole Arbitrator considers the comparison to be irrelevant as the specific circumstances surrounding the ABP of the British athlete are unknown. It is even alleged by the IAAF that the British athlete has in fact never been charged for abnormalities in her ABP.
162. In the opinion of the Sole Arbitrator, the mere fact that this British athlete has allegedly not been charged for an anti-doping rule violation because the explanations advanced (altitude training, the timing of one sample (apparently taken shortly after the race in hot conditions, affecting her hydration level) and the use of antibiotics for illness) were allegedly considered opportune, does not mean that such arguments are necessarily credible explanations that would explain abnormalities in each and every ABP. Rather, it is to be assessed on a case-by-case basis whether the explanations of an athlete for alleged abnormalities in an ABP are credible. In any event, the Sole Arbitrator finds that the Athlete failed to establish or argue that there was hemodilution (distorted blood values due to a sample being taken shortly after intensive competition or training in high altitude) in respect of one or more samples of her ABP, although the concept of hemodilution was discussed during the hearing. The arguments of the Athlete related to the “case” of the British athlete are therefore dismissed.

163. Finally, in respect of Dr. Faber’s argument that an interpretation by an expert is only meaningful when two or more competing propositions are addressed and that the role of the expert then is to consider the probability of the evidence given the propositions that are addressed, the Sole Arbitrator observes that this is exactly what the Expert Panel did in analysing the Athlete’s ABP, particularly at the stage of issuing its Joint Expert Opinion. The Expert Panel did not only consider the probability of the abnormal results being caused by a doping scenario, but indeed also considered whether the arguments advanced by the Athlete (*e.g.* miscarriage, surgeries, iron supplements, hypoxic devices/training, menstrual bleeding) could explain the abnormalities or whether it is the result of a normal physiological or pathological condition. After having considered all these theories, the Expert Panel upheld its conclusions.
164. Having dismissed all Dr. Faber’s criticism on the ABP, the Sole Arbitrator finds that although the Athlete was not able to provide a credible non-doping related explanation for the abnormal values in her ABP as a whole, he reiterates that this does not automatically mean that the abnormal values are necessarily to be explained by doping. Rather, the Sole Arbitrator needs to be convinced that the abnormal values are caused by a “doping scenario”, which does not necessarily derive from the quantitative information provided by the ABP, but rather from a qualitative interpretation of the experts and possible further evidence.
165. In this respect, the Expert Panel determined the following in its Joint Expert Opinion:
- “We refer to our previous reports for the abnormalities observed in the profile. In brief, these were:*
- *An abnormal blood pattern with overall higher haemoglobin values in summer compared to winter (see for example samples 3, 6, 7, 12, 13 (summer) in comparison to samples 4, 5, 10, 11 (winter)), which points towards manipulation aimed at increasing red cell mass for the competitive season.*
 - *Several “OFF” situations when testing at major competitions, suggesting an artificially increased red cell mass: Sample 2 (obtained in connection with a competition in Stockholm), samples 7 and 8 (obtained during a competition period with races in Birmingham and in Kazan), sample 12 (obtained following a competition period with races in Rabat and Huehwa)”.*
166. The Sole Arbitrator notes that, indeed, Samples 2, 3, 6, 7, 12 and 13 show relatively elevated levels of haemoglobin (HGB), whereas Samples 4, 5, 10 and 11, referred to by the Joint Expert Opinion, show relatively low levels of haemoglobin (HGB), although all within the “normality” threshold of the ABP.
167. The particularity with these samples is that Samples 2, 3, and 7 were all taken closely before an important competition and that Samples 6 and 12 were taken rather close to a next-following competitions, whereas Samples 4, 5, 10 and 11 were taken rather distant from competitions:

No.	Date of Sample	Most recent competition before Sample	Most recent competition after Sample
2	17 June 2011	12 June 2011 – Moscow	19 June 2011 – Stockholm
3	26 August 2011	24 July 2011 – Cheboksary	28 August 2011 – Daegu
4	24 November 2012	6 August 2012 – London	15 June 2013 – Yenno
5	18 January 2013	6 August 2012 – London	15 June 2013 – Yenno
6	30 April 2013	6 August 2012 – London	15 June 2013 – Yenno
7	21 June 2013	16 June 2013 – Yenno	22 June 2013 – Gateshead
10	19 December 2013	6 September 2013 – Bruxelles	17 July 2014 – Moscow
11	24 April 2014	6 September 2013 – Bruxelles	17 July 2014 – Moscow
12	18 June 2015	14 June 2015 – Rabat	25 July 2015 – Yenno
13	5 August 2015	25 July 2015 – Yenno	/

168. The Sole Arbitrator finds that, if one focusses on the samples referred to by the experts in para. 165 above, a clear pattern in the Athlete’s blood values is visible if the competition schedule of the Athlete is taken into account.
169. The Sole Arbitrator considers this combination of circumstances convincing evidence that the Athlete engaged in blood doping practices throughout the period between at least 17 June 2011 and 5 August 2015.
170. The Sole Arbitrator finds that the IAAF succeeded to establish a “doping scenario” and is satisfied, indeed to his comfortable satisfaction, that the values in the Athlete’s ABP are caused by the use of a prohibited substance or a prohibited method by the Athlete.
171. Consequently, the Sole Arbitrator finds that the Athlete violated Rule 32.2(b) of the 2012-2013 IAAF Rules.

ii) If an anti-doping rule violation was committed, what sanction shall be imposed on the Athlete?

172. The Sole Arbitrator observes that Rule 40.2 of the 2012-2013 IAAF Rules determines the following:

“The period of Ineligibility imposed for a violation of Rules 32.2(a) (Presence of a Prohibited Substance or its Metabolites or Markers), 32.2(b) (Use or Attempted Use of a Prohibited Substance or Prohibited Method) or 32.2(f) (Possession of Prohibited Substances and Prohibited Methods), unless the conditions for eliminating or reducing the period of Ineligibility as provided in Rules 40.4 and 40.5, or the conditions for increasing the period of Ineligibility as provided in Rule 40.6 are met, shall be as follows: First Violation: Two (2) years’ Ineligibility”.

173. Rule 40.6 of the 2012-2013 of the IAAF Rules determines as follows:

“If it is established in an individual case involving an anti-doping rule violation other than violations under Rule 32.2(g) (Trafficking or Attempted Trafficking) and Rule 32.2(b) (Administration or Attempted

Administration) that aggravating circumstances are present which justify the imposition of a period of Ineligibility greater than the standard sanction, then the period of Ineligibility otherwise applicable shall be increased up to a maximum of four (4) years unless the Athlete or other Person can prove to the comfortable satisfaction of the hearing panel that he did not knowingly commit the anti-doping rule violation.

- (a) Examples of aggravating circumstances which may justify the imposition of a period of Ineligibility greater than the standard sanction are: the Athlete or other Person committed the anti-doping rule violation as part of a doping plan or scheme, either individually or involving a conspiracy or common enterprise to commit anti-doping rule violations; the Athlete or other Person used or possessed multiple Prohibited Substances or Prohibited Methods or used or possessed a Prohibited Substance or Prohibited Method on multiple occasions; a normal individual would be likely to enjoy performance-enhancing effects of the anti-doping rule violation(s) beyond the otherwise applicable period of Ineligibility; the Athlete or other Person engaged in deceptive or obstructing conduct to avoid the detection or adjudication of an anti-doping rule violation. For the avoidance of doubt, the examples of aggravating circumstances referred to above are not exclusive and other aggravating factors may also justify the imposition of a longer period of Ineligibility.*
- (b) An Athlete or other Person can avoid the application of this Rule by admitting the anti-doping rule violation as asserted promptly after being confronted with the anti-doping rule violation (which means no later than the date of the deadline given to provide a written explanation in accordance with Rule 37.4(c) and, in all events, before the Athlete competes again”.*

- 174. The Sole Arbitrator finds that Rule 40.4 dealing with Specified Substances is clearly not applicable in the case at hand and that no circumstances could be demonstrated by the Athlete as to the application of Rule 40.5 (Elimination or Reduction of Period of Ineligibility Based on Exceptional Circumstances). The Athlete in fact disputed to have committed an anti-doping rule violation, but did not put forward any arguments that could lead to the reduction of the otherwise applicable standard sanction of a two year period of ineligibility in case an anti-doping rule violation would be established.
- 175. The remaining question to be examined by the Sole Arbitrator is therefore whether there are aggravating circumstances that should lead to an increase of the standard sanction, up to a maximum of a four year period of ineligibility in accordance with Rule 40.6 of the IAAF Rules.
- 176. The Sole Arbitrator holds that the IAAF was able to convince him to his comfortable satisfaction that the Athlete was subjected to a sophisticated doping scheme, which on its own is given as example for aggravating circumstances by the IAAF Rules and recognised by CAS jurisprudence. This scheme prolonged over a period of more than four years. Thus, the Athlete used a prohibited substance or prohibited method and in parallel followed an extended doping scheme.
- 177. The Sole Arbitrator takes into account the CAS jurisprudence referred to by the IAAF (CAS 2012/A/2773 and CAS 2013/A/3080), where a four year and a two year and nine months period of ineligibility, respectively, were imposed on athletes for ABP violations. The Sole Arbitrator is aware of the IAAF’s pleadings for a period of ineligibility towards the higher end of the 2-4 year spectrum to be imposed on the Athlete.

178. The Sole Arbitrator further takes note of the two CAS awards relied upon by the Athlete (CAS 2008/A/1718 and CAS 2013/A/3373), where CAS increased the sanction to two years and nine months, respectively, but considers only the first case as relevant in the ABP context. Different from that case, in the present case none of the parties raised the issue of eventual assistance from athlete support personnel or officials in the anti-doping rule violation with the exception of entering whereabouts into the ADAMS system.
179. The Sole Arbitrator reads the case CAS 2013/A/3080, at paras. 82 – 84, as demonstrating that not all ABP violations automatically lead to the increase of the period of ineligibility to the maximum of four years. In that case, the Panel imposed a sanction of two years and nine months ineligibility considering that the established culpability of the athlete related to only one year and to the targeting of two competitions. In the case CAS 2012/A/2773, on the other hand, a period of four years ineligibility was imposed, because obviously the whole career of the respective athlete was built on doping.
180. Considering that the established ABP violation of the Athlete lasted considerably longer than in the cases CAS 2013/A/3080 and CAS 2008/A/1718, but on the other hand, that the IAAF did not maintain that the whole career of the Athlete was built on doping, and considering that there was no additional anti-doping rule violation established in the case at stake, the Sole Arbitrator finds that a period of ineligibility of three years is appropriate taking into account the severity of the Athlete’s misbehaviour.
181. The Sole Arbitrator finds that for practical reasons and in order to avoid any eventual misunderstanding the period of ineligibility shall start on 7 December 2015, the date of commencement of the provisional suspension and not on the date of the award. The Athlete’s exclusion from the Russian team for the 2015 World Championship did not amount to a suspension since she remained eligible for other competitions and this period shall, therefore, not be credited.
182. The length of the period of ineligibility to be imposed must be defined considering the disqualification of the Athlete’s results, which come equal to the effects of a retro-active suspension. The Sole Arbitrator observes that Rule 40.8 of the 2012-2013 IAAF Rules, determines as follows:
- “In addition to the automatic disqualification of the results in the Competition which produced the positive sample under Rules 39 and 40, all other competitive results obtained from the date the positive Sample was collected (whether In-Competition or Out-of-Competition) or other anti-doping rule violation occurred through the commencement of any Provisional Suspension or Ineligibility period shall be Disqualified with all of the resulting Consequences for the Athlete including the forfeiture of any titles, awards, medals, points and prize and appearance money”.*
183. The Sole Arbitrator takes note that this is not a case of a specific “positive sample”, it is however a case that falls under Rule 40 of the IAAF Rules as a consequence of which the Athlete’s competitive results are nevertheless subject to disqualification. A complicating factor in this respect is that an anti-doping rule violation established on the basis of an ABP does not determine when the violation of Rule 32.2(b) of the IAAF Rules was committed exactly, but

rather than based on all the evidence available it must be concluded that a violation was committed during a certain period. This difficulty has already been identified in CAS jurisprudence (CAS 2010/A/2235, para. 116).

184. In the present case, and taking into account the argument of the IAAF in this respect, the Sole Arbitrator is satisfied to accept that Sample 2 is evidence of doping. The Sole Arbitrator is also willing to accept that the Athlete systematically used doping at least over the course of the following four years, since a clear pattern could be established. On the other hand, the Sole Arbitrator observes that the Claimant did not argue that the whole career of the Athlete was built on doping.
185. As explained in para. 77 above, the Sole Arbitrator finds that a fairness exception must be read into Rule 40.8 2012-2013 IAAF Rules read together with Articles 40.8 and 23.2.2 WADC. Only when reading in this manner and applying them fairly to the Athlete concerned both provisions can be understood as complying with the proportionality requirement under general principles of law applicable in Switzerland and Monaco, being the seats of WADA and the IAAF respectively. This arbitral award is subject to review by the Swiss Federal Tribunal. The Sole Arbitrator, thus, is bound to observe the Swiss public policy, which – as far as emanating from the European Convention on Human Rights (the “ECHR”) – is also binding for the IAAF under the law of Monaco, which is the subsidiary law applicable in the present case. Monaco has ratified the ECHR on 30 November 2005.
186. The European Court of Human Rights (the “EHRC”) stated in the *Lithgow and others v. The United Kingdom* case (8 July 1986, application nos. 9006/80, 9262/81, 9263/81, 9265/81, 9266/81, 9313/81, 9405/81) at para. 194 that the following requirements need to be met in case of even obligatory arbitration:
- (a) *The right of access to the courts secured by Article 6 para. 1 (art. 6-1) is not absolute but may be subject to limitations; these are permitted by implication since the right of access “by its very nature calls for regulation by the State, regulation which may vary in time and in place according to the needs and resources of the community and of individuals”.*
 - (b) *In laying down such regulation, the Contracting States enjoy a certain margin of appreciation, but the final decision as to observance of the Convention’s requirements rests with the Court. It must be satisfied that the limitations applied do not restrict or reduce the access left to the individual in such a way or to such an extent that the very essence of the right is impaired.*
 - (c) *Furthermore, a limitation will not be compatible with Article 6 para. 1 (art. 6-1) if it does not pursue a legitimate aim and if there is not a reasonable relationship of proportionality between the means employed and the aim sought to be achieved”.*
187. Established CAS jurisprudence is aware of this obligation and holds that the principle of proportionality requires to assess whether a sanction is appropriate to the violation committed in the case at stake. Excessive sanctions are prohibited (see e.g. CAS 2005/A/830, at paras. 10.21 – 10.31; 2005/C/976 & 986, at paras. 139, 140, 143, 145 – 158; 2006/A/1025, at paras 75 – 103; TAS 2007/A/1252, at paras. 33 - 40, CAS 2010/A/2268 at paras. 141 f, all of them

referring to and analysing previous awards and doctrine). The Sole Arbitrator does not see that any more recent arbitral award referred to by the IAAF in its observations has deviated from this requirement. These more recent arbitral awards simply come to the conclusion that there was no issue with regard to proportionality in the facts of these cases. One arbitral award only discussed fairness.

188. The Sole Arbitrator considers as essential and continuously applicable also under the WADC and the 2015 WADC, which, by the way, *e.g.* in Article 10.10 explicitly refers to the principle of proportionality, what the Panel had stated in CAS 2005/C/976 & 986, at para. 143:

“To find out, whether a sanction is excessive, a judge must review the type and scope of the proved rule-violation, the individual circumstances of the case, and the overall effect of the sanction on the offender”.

189. This proportionality test circumscribes in other words the three-prong test argued by the Athlete in the present case. The Sole Arbitrator considers that the anti-doping rule violation in the present case results from an ABP finding and not from a laboratory’s establishment of the presence of a prohibited substance in an athlete’s bodily fluid. Rule 40.8 2012-2013 IAAF Rules, implementing Article 10.8 WADC, was clearly construed to meet the circumstances of the latter facts. The ABP procedure was developed as a subsequent indirect method of evidence, which – lacking any direct evidence – allows an athlete to compete for a considerably longer period of time, acquire results including medals, points and prizes while the athlete is already under observation and screening. Rule 40.8 2012-2013 IAAF Rules, not considering a fairness exception, acts totally different in the case of an ABP examination lasting for four and a half years than in case an athlete is caught for a direct anti-doping rule violation. In the latter case, the analysis of a sample, the subsequent review process, the notification of the anti-doping rule violation, the time-line for explanation by the Athlete and the ensuing disciplinary proceedings may be finished within a period of a few months, at the utmost, including an appeal procedure before CAS, may last for, maybe, two years.
190. In the case of the present ABP finding, only for the evidentiary phase which would come equal to a urine/blood test and laboratory analysis in the case of a direct adverse analytical finding instead of about one/two months, 4,5 years were needed. Assuming that the subsequent procedure in both cases would take the same period of time, the Athlete being sanctioned based on an ABP finding would have a disadvantage of more than 4 years as to the application of Rule 40.8 2012-2013 IAAF Rules. Even considering that the Athlete herself, by using a sophisticated plan, scheme and tactics in order to hide the use of a prohibited substance or prohibited method, was responsible for this disadvantage as to the application of Rule 40.8, the Sole Arbitrator, nevertheless, holds that only the application of a fairness exception will strike a balance of proportionality between the legitimate aims of deterrence and the fight against doping and the means used for such purpose. To apply Rule 40.8 literally would clearly lead to an excessive sanction prohibited by Article 6 of the ECHR.
191. The Sole Arbitrator takes note and feels comforted by the argument and ruling of a previous CAS panel in CAS 2012/A/2773, para. 132, which has disqualified results going back to the first sample that was collected in the context of an ABP. Thus, the Sole Arbitrator holds that the disqualification shall start on 17 June 2011.

192. In a case of an anti-doping rule violation established by direct means of evidence, a provisional suspension would have been imposed on average two months later. The period of disqualification, thus, would have lasted only two months. In the present case, the Athlete had the advantage of earning results, points and prizes for a considerable longer period of time. Considering this advantage and the aggravating circumstances leading to an increased period of ineligibility on the one side, and the social and financial effects of the imposed measure on the other hand, the Sole Arbitrator finds as justified, fair and proportionate to impose a period of disqualification of results which covers all results having been achieved during the period that it has been proven that the Athlete used prohibited substances or prohibited methods, demonstrated through the Athlete's ABP.
 193. The Sole Arbitrator, thus, holds that all results achieved between 17 June 2011 and 5 August 2015 included shall be disqualified, including the forfeiture of any titles, awards, medals, points and prize and appearance money.
 194. The Sole Arbitrator is aware of the fact that such period of disqualification, seen only from the perspective of the sanction of disqualification of the results, must be deemed excessive in terms of proportionality. However, not to disqualify results that have been achieved by using a prohibited substance or prohibited method cannot be considered as fair with regard to other athletes that competed against the Athlete during this period. In fact, the main purpose of disqualification of results is not to punish the transgressor, but rather to correct any unfair advantage and remove any tainted performances from the record (LEWIS/TAYLOR (Eds.), *Sport: Law and Practice*, 2014, para. C.162, with further references).
 195. As a consequence, the Sole Arbitrator finds that a period of ineligibility of three years as from 7 December 2015 is to be imposed on the Athlete and that all results of the Athlete since 17 June 2011 are to be disqualified through to 5 August 2015, including the forfeiture of any titles, awards, medals, points and prize and appearance money achieved during this period.
- (...).
202. The present award may be appealed to CAS pursuant to Rule 42 of the IAAF Rules.

ON THESE GROUNDS

The Court of Arbitration for Sport rules that:

1. The claim filed on 22 February 2016 by the International Association of Athletics Federations against the All Russia Athletics Federation and Ms Ekaterina Sharmina is partially upheld.
2. A period of ineligibility of three years is imposed on Ms Ekaterina Sharmina starting from 7 December 2015.
3. All results of Ms Ekaterina Sharmina since 17 June 2011 are disqualified through to 5 August 2015, including forfeiture of any titles, awards, medals, points and prize and appearance money obtained during this period.

(...)

6. All other and further prayers or requests for relief are dismissed.