FIBA World Ranking Boys, Presented by Nike
Detailed Examples

Examples of Method Stage 1

1. When France beat Serbia in the Semi-Final of FIBA U19 World Cup 2021, the basis points (BP) awarded for this game were 600 to France and 400 to Serbia due to France's 6-point margin of victory (75-69). Pre-game, Serbia were ranked #5, with an average ranking of 57 across all teams (according to the ranking's new system). Therefore, this gives an opposition ranking points (ORP) of 1.5 x (57 - 5) = 1.5 x 52 = 78. The scaling factor (SF) for the match was 1 because it was not a FIBA Oceania Cup or FIBA EuroBasket Division B or C game. Therefore, the final rating points (RP) for France from this game are: **RP= SF x (BP + ORP) = 1 x (600 + 78) = 678**. Serbia obtained 400 basis points because they lost by 6 points. France were ranked #3 pre-game. This gives an opposition ranking points of 1.5 x (57 - 3) = 1.5 x 54 = 81. Therefore, the final rating points for Serbia from this game are: **RP= SF x (BP + ORP) = 1 x (400 + 81) = 481.**

2. When Poland beat Netherlands in the FIBA U16 EuroBasket 2019 Division B, the basis points awarded for this game were 700 to the Poland and 300 to Netherlands due to the Poland's 13-point margin of victory (71-58). Pre-game, Netherlands were ranked #40, with an average of 59 across all teams (according to the ranking's new system). Therefore, this gives an opposition ranking points (ORP) of **1.5 x (58 - 40) = 1.5 x 18 = 27**. Because this was a FIBA EuroBasket Division B game, the scaling factor (SF) is 0.5. Therefore, the final rating points for Poland from this game are: **RP= SF x (BP + ORP) = 0.5 x (700 + 37) = 363.5**. Netherlands obtained 300 basis points because they lost by 13 points. Poland were ranked #59 pre-game. This gives an opposition ranking points of 1.5 x (58 - 59) = 1.5 x -1 = -1.5. Therefore, the final rating points for Netherlands from this game are: **RP= BP + ORP = 0.5 x (300 - 1.5) = 149.25**.

3. When Brazil beat Mexico in the Second Round of the FIBA U16 AmeriCup 2019, the basis points (BP) awarded for this game were 600 to Brazil and 400 to Mexico due to the Brazilians' 2-point margin of victory (64-62). Pre-game, Mexico were ranked #57, with an average ranking of 58 across all teams (according to the ranking's new system). Therefore, this gives an opposition ranking points (ORP) of 1.5 x (58 - 57) = 1.5 x 1 = 1.5. The scaling factor (SF) for the match was 1 because it was not a FIBA Oceania Cup or FIBA European Championship Division B or C game.

Therefore, the final rating points (RP) for Brazil from this game are: **RP= SF x (BP + ORP) = 1 x (600 + 1.5) = 601.5**. Mexico obtained 400 basis points because they lost by 2 points. Brazil were ranked #41 pre-game. This gives an opposition ranking points of **1.5 x (58 - 42) = 1.5 x 16 = 24**. Therefore, the final rating points for Mexico from this game are: **RP= SF x (BP + ORP) = 1 x (400 + 24) = 424**.

Note that in all examples, the opposition ranking points use the rankings according to the new FIBA World Ranking Boys, applied to historical data. This is necessary because the new ranking system ranks more teams than the previous competition-based ranking system, and therefore rankings are needed for all teams.

Examples of Method Stage 2

1. For the France v Serbia game in the example presented in stage 1 of the calculation, the competition (C) is the FIBA U19 World Cup, so the weight would be C = 2.5, The game is not a Division B or C game and the round (R) is the Semi-Final, so the Division weight (D) = 1 and R = 6 for France and R = 1 for Serbia. The final weight (W) would depend on the date that the new FIBA World Ranking Boys, was being calculated, because the time decay (TD) will change when there are newer occurrences of tournaments. If the rating was being calculated in December 2021, then the game would have been played in the most recent occurrence of that Championship so the time decay would be TD = 1. This would give a weight for this game of W = TD x C x D x R = 1 x 2.5 x 1 x 6 = 15 for France and W = TD x C x D x R = 1 x 2.5 x 1 x 1 = 2.5 for Serbia.

2. For the Poland v Netherlands game in the example presented in stage 1 of the calculation, the competition (C) is the FIBA U16 EuroBasket, so the weight would be C = 1. The game is a Division B game which means the round (R) factor is fixed at 1, so the Division weight (D) = 0.5 and R = 1 for both teams. The final weight (W) would depend on the date that the new FIBA World Ranking Boys, was being calculated, because the time decay (TD) will change when new instances of the Championship were played. If the rating was being calculated in December 2019, then the game would have been played in the most recent occurrence of that tournament, so the time decay would be TD = 1. This would give a weight for this game of W = TD x C x D x R = 1 x 1 x 0.5 x 1 = 0.5 for both teams.

3. For the Brazil v Mexico game in the example presented in stage 1 of the calculation, the competition (C) is the FIBA U16 AmeriCup 2019 so the weight would be C = 0.8. The game is not a Division B or C game and the round (R) is the second round, so the Division weight (D) = 1 and R = 2 for Brazil and 1 for Mexico. The final weight (W) would depend on the date that the new FIBA World Ranking Boys, was being calculated, because the time decay (TD) will change when new instances of the Championship were played. If the rating was being calculated in December 2021, then the game would be in the second most recent FIBA U16 AmeriCup, so the time decay would be TD = 0.5. This would give a weight for this game of W = TD x C x S x R = 0.5 x 0.8 x 1 x 2 = 0.8 for Brazil and W = TD x C x S x R = 0.5 x 0.8 x 1 x 1 = 0.4 for Mexico.

To calculate the final **team ratings** the penalized weighting is calculated as:

$$\frac{\Sigma i\ RPi \times Wi}{max(K, \Sigma i\ Wi)}$$

Where the Greek symbol Σ denotes a sum which is over all the historical games (indexed by i) played by the team in contributing Championships and for each game i,

RPi = Rating points for game i

Wi = Weight of game i

The constant **K** is a mathematical penalty term that ensures that teams who have played few games are not ranked too highly because of small sample size.

To calculate the new FIBA World Ranking Boys, we then simply rank the teams according to the team ratings calculated above.