

## FIDE (DUTCH) SYSTEM

Approved by the Council on dd/mm/yyyy

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### 0. Terms and Definitions

Terms and Definitions added at the 88th FIDE Congress in Goybuk 2017. See <https://spp.fide.com/fide-dutch-extras/>.

### 1. Introductory Remarks and Definitions

#### 1.1 Initial Ranking List

See the Initial Order section of the General Handling Rules for Swiss Tournaments.

#### 1.2 Order

For pairings purposes only, the players are ranked in order of, respectively

1.2.1 Score

1.2.2 Pairing numbers assigned to the players accordingly to the initial ranking list and subsequent modifications depending on possible late entries or rating adjustments

#### 1.3 Scoregroups and Pairing Brackets

1.3.1 A scoregroup is composed of (all) the players with the same score.

1.3.2 A (pairing) bracket is a group of players to be paired. It is composed of players coming from a non-empty scoregroup (called resident players) and (possibly) of players who remained un-paired after the pairing of the previous bracket.

1.3.3 A (pairing) bracket is homogeneous if all the players have the same score; otherwise it is heterogeneous.

1.3.4 A remainder (pairing bracket) is a sub-bracket of a heterogeneous bracket, containing some of its resident players (see Article 2.3 for further details).

#### 1.4 Floaters and Floats

1.4.1 A downfloater is a player who remains unpaired in a bracket, and is thus moved to the next bracket. In the destination bracket, such players are called "moved-down players" (MDPs for short).

1.4.2 After two players with different scores have played each other in a round, the higher ranked player receives a downfloat, the lower one an upfloat.

1.4.3 A player who, for whatever reason, scores without playing in a round more points than those rewarded for a loss, also receives a downfloat.

#### 1.5 Byes

1.5.1 See Article 3 of the Basic Rules for Swiss Systems (*Should the number of players to be paired be odd, one player is unpaired. This player receives a*

*pairing-allocated bye: no opponent, no colour and as many points as are rewarded for a win, unless the regulations of the tournament state otherwise).*

## **1.6 Colour Differences and Colour Preferences**

- 1.6.1 The colour difference of a player is the number of games played with white minus the number of games played with black by this player.
- 1.6.2 The colour preference is the colour that a player should ideally receive for the next game. It can be determined for each player who has played at least one game.
- 1) An absolute colour preference occurs when a player's colour difference is greater than +1 or less than -1, or when a player had the same colour in the two latest rounds they played. The preference is white when the colour difference is less than -1 or when the last two games were played with black. The preference is black when the colour difference is greater than +1, or when the last two games were played with white.
  - 2) A strong colour preference occurs when a player's colour difference is +1 (preference for black) or -1 (preference for white).
  - 3) A mild colour preference occurs when a player's colour difference is zero, the preference being to alternate the colour with respect to the previous game they played.
  - 4) Players who did not play any games have no colour preference (the preference of their opponents is granted).

## **1.7 Topscorers**

- 1.7.1 Topscorers are players who have a score of over 50% of the maximum possible score when pairing the final round of the tournament.

## **1.8 Pairing Score Difference (PSD)**

- 1.8.1 The pairing of a bracket is composed of pairs and downfloaters.
- 1.8.2 The PSD of a bracket is a list of score-differences (*SD*, see *below*), sorted from the highest to the lowest.
- 1.8.3 For each pair in a pairing, the SD is defined as the absolute value of the difference between the scores of the two players who constitute the pair.
- 1.8.4 For each downfloater, the SD is defined as the difference between the score of the downfloater, and an artificial value that is one point less than the score of the lowest ranked player of the current bracket (even when this yields a negative value).
- Note: The artificial value defined above was chosen in order to be strictly less than the lowest score of the bracket, and generic enough to work with different scoring-point systems and in presence of non-existent, empty or sparsely populated scoregroups that may follow the current one.*
- 1.8.5 PSD(s) are compared lexicographically (*i.e. their respective SD(s) are compared one by one from first to last - in the first corresponding SD(s) that are different, the smallest one defines the lower PSD*).

## **1.9 Round-Pairing Outlook**

- 1.9.1 The pairing of a round (called round-pairing) is complete if all the players (except at most one, who receives the pairing-allocated bye) have been paired and the absolute criteria [C1]-[C3] (see Article 3.1) have been complied with.
- 1.9.2 The pairing process starts with the top scoregroup, and continues bracket by bracket until all the scoregroups, in descending order, have been used and the round-pairing is complete.
- 1.9.3 If it is impossible to complete a round-pairing, the arbiter shall decide what to do.

*Note: Article 2 describes the pairing process of a single bracket.*

*Article 3 describes all the criteria that the pairing of a bracket has to satisfy (in order of priority).*

*Article 5 describes the colour allocation rules that determine which players will play with White.*

## **2. Pairing Process for a Bracket**

### **2.1 Parameter Definitions**

- 2.1.1  $M_0$  is the number of MDP(s) coming from the previous bracket. It may be zero.
- 2.1.2 MaxPairs is the maximum number of pairs that can be produced in the bracket under consideration (see [C6], Article 3.4.1).

*Note: MaxPairs is usually equal to the number of players divided by two and rounded downwards. However, if, for instance,  $M_0$  is greater than the number of resident players, MaxPairs is at most equal to the number of resident players.*

- 2.1.3  $M_1$  is the maximum number of MDP(s) that can be paired in the bracket (see [C7], Article 3.4.2).

*Note:  $M_1$  is usually equal to the number of MDPs coming from the previous bracket, which may be zero. However, if, for instance,  $M_0$  is greater than the number of resident players,  $M_1$  is at most equal to the number of resident players.  $M_1$  can never be greater than MaxPairs.*

### **2.2 Subgroups (Original Composition)**

- 2.2.1 To make the pairing, each bracket will be usually divided into two subgroups, called S1 and S2. S1 initially contains the highest  $N_1$  players (sorted according to Article 1.2), where  $N_1$  is either  $M_1$  (in a heterogeneous bracket) or MaxPairs (otherwise).
- 2.2.2 S2 initially contains all the remaining resident players.
- 2.2.3 When  $M_1$  is less than  $M_0$ , some MDPs are not included in S1. The excluded MDPs (in number of  $M_0 - M_1$ ), who are neither in S1 nor in S2, are said to be in a *Limbo*.

*Note: the players in the Limbo cannot be paired in the bracket, and are thus bound to double-float.*

### **2.3 Preparation of the Candidate**

- 2.3.1 S1 players are tentatively paired with S2 players, the first one from S1 with the first one from S2, the second one from S1 with the second one from S2 and so on.
- 2.3.2 In a homogeneous bracket: the pairs formed as explained in Article 2.3.1 and all the players who remain unpaired (bound to be downfloaters) constitute a candidate (pairing).
- 2.3.3 In a heterogeneous bracket: the pairs formed as explained in Article 2.3.1 match M1 MDPs from S1 with M1 resident players from S2. This is called a MDP-Pairing. The remaining resident players (*if any*) give rise to the remainder (see Article 1.3), which is then paired with the same rules used for a homogeneous bracket.
- Note: M1 may sometimes be zero. In this case, S1 will be empty and the MDP(s) will all be in the Limbo. Hence, the pairing of the heterogeneous bracket will proceed directly to the remainder.*
- 2.3.4 A candidate (pairing) for a heterogeneous bracket is composed by a MDP-Pairing and a candidate for the ensuing remainder. All players in the Limbo are bound to be downfloaters.

## **2.4 Evaluation of the Candidate**

- 2.4.1 If the candidate built as shown in Article 2.3 complies with all criteria from [C1] to [C5] (see Articles 3.1 to 3.3), and all the quality criteria from [C6] to [C21] (see Article 3.4) are fulfilled, the candidate is called "perfect" and is (immediately) accepted. Otherwise, apply Article 2.5 in order to find a perfect candidate; or, if no such candidate exists, apply Article 2.8.

## **2.5 Actions when the Candidate is not Perfect**

- 2.5.1 The composition of S1, Limbo and S2 has to be altered in such a way that a different candidate can be produced.
- 2.5.2 Articles 2.6 (for homogeneous brackets and remainders) and 2.7 (for heterogeneous brackets) define the precise sequence in which the alterations must be applied.
- 2.5.3 After each alteration, a new candidate shall be built (see Article 2.3) and evaluated (see Article 2.4).

## **2.6 Alterations in Homogeneous Brackets or Remainders**

- 2.6.1 Alter the order of the players in S2 with a transposition (see Article 4.2). If no more transpositions of S2 are available for the current S1, alter the original S1 and S2 (see Article 2.2) applying an exchange of resident players between S1 and S2 (see Article 4.3) and reordering the newly formed S1 and S2 according to Article 1.2.

## **2.7 Alterations in Heterogeneous Brackets**

- 2.7.1 Operate on the remainder with the same rules used for homogeneous brackets (see Article 2.6).

*Note: The original subgroups of the remainder, which will be used throughout all the remainder pairing process, are the ones formed right after the*

*MDP-Pairing. They are called S1R and S2R (to avoid any confusion with the subgroups S1 and S2 of the complete heterogeneous bracket).*

- 2.7.2 If no more transpositions and exchanges are available for S1R and S2R, alter the order of the players in S2 with a transposition (see Article 4.2), forming a new MDP-Pairing and possibly a new remainder (to be processed as written in Article 2.4.1).
- 2.7.3 If no more transpositions are available for the current S1, alter, if possible (i.e. if there is a Limbo), the original S1 and Limbo (see Article 2.2), applying an exchange of MDPs between S1 and the Limbo (see Article 4.4), reordering the newly formed S1 according to Article 1.2 and restoring S2 to its original composition.

## **2.8 Actions when no Perfect Candidate Exists**

- 2.8.1 Choose the best available candidate. In order to do so, consider that a candidate is better than another if it better satisfies the PAB Criterion ([C5], see Article 3.3) or a quality criterion ([C6]-[C21], see Article 3.4) of higher priority; or, all quality criteria being equally satisfied, it is generated earlier than the other one in the sequence of the candidates (see Articles 2.6 or 2.7).

## **3. Pairing Criteria**

### **3.1 Absolute Criteria**

No pairing shall violate the following absolute criteria:

- 3.1.1 [C1] See the Basic Rules for Swiss, Article 2 (*Two players shall not play against each other more than once*).
- 3.1.2 [C2] See the Basic Rules for Swiss, Article 4 (*A player who has already received a pairing-allocated bye, or has already scored in one single round, without playing, as many points as rewarded for a win, shall not receive the pairing-allocated bye*).
- 3.1.3 [C3] Non-topscorers (see Article 1.7) with the same absolute colour preference (see Article 1.6.2.1) shall not meet (see the Basic Rules for Swiss, Articles 6 and 7).

### **3.2 Completion Criterion**

- 3.2.1 [C4] After the bracket has been paired, its downfloaters, together with the players from all the remaining scoregroups, shall allow the completion of the round-pairing.

### **3.3 PAB Criterion**

- 3.3.1 [C5] Minimise the score of the assignee of the pairing-allocated-bye.

### **3.4 Quality Criteria**

To obtain the best possible pairing for a bracket, comply as much as possible with the following criteria, given in descending priority:

- 3.4.1 [C6] Minimise the number of downfloaters (*equivalent to: maximise the number of pairs*).

- 3.4.2 [C7] Minimise the PSD (*This means: maximise the number of paired MDP(s); and, as far as possible, pair the ones with the highest scores*).
- 3.4.3 [C8] Choose the set of downfloaters so that in the following bracket every criterion from [C1] to [C7] (see Articles 3.1 to 3.4.2) is complied with.
- 3.4.4 [C9] Minimise the number of unplayed games of the assignee of the pairing-allocated-bye.
- 3.4.5 [C10] Minimise the number of topscorers or topscorers' opponents who get a colour difference higher than +2 or lower than -2.
- 3.4.6 [C11] Minimise the number of topscorers or topscorers' opponents who get the same colour three times in a row.
- 3.4.7 [C12] Minimise the number of players who do not get their colour preference.
- 3.4.8 [C13] Minimise the number of players who do not get their strong colour preference.
- 3.4.9 [C14] Minimise the number of players who receive the same downfloat as the previous round.
- 3.4.10 [C15] Minimise the number of players who receive the same upfloat as the previous round.
- 3.4.11 [C16] Minimise the number of players who receive the same downfloat as two rounds before.
- 3.4.12 [C17] Minimise the number of players who receive the same upfloat as two rounds before.
- 3.4.13 [C18] Minimise the score differences of players who receive the same downfloat as the previous round.
- 3.4.14 [C19] Minimise the score differences of players who receive the same upfloat as the previous round.
- 3.4.15 [C20] Minimise the score differences of players who receive the same downfloat as two rounds before.
- 3.4.16 [C21] Minimise the score differences of players who receive the same upfloat as two rounds before.

#### **4. Rules for the Sequential Generation of the Pairings**

##### **4.1 In-Bracket Sequence-Number (BSN)**

- 4.1.1 Before any transposition or exchange take place, all players in the bracket shall be tagged with consecutive BSNs representing their respective ranking order (according to Article 1.2) in the bracket (i.e. 1, 2, 3, 4, ...).

##### **4.2 Transpositions in S2**

- 4.2.1 A transposition is a change in the order of the BSNs (*all representing resident players*) in S2.
- 4.2.2 All the possible transpositions are sorted depending on the lexicographic value of their first N1 BSN(s), where N1 is the number of BSN(s) in S1 (*the remaining*

*BSN(s) of S2 are ignored in this context, because they represent players bound to constitute the remainder in case of a heterogeneous bracket; or bound to downfloat in case of a homogeneous bracket - e.g. in a 11-player homogeneous bracket, it is 6-7-8-9-10, 6-7-8-9-11, 6-7-8-10-11, ..., 6-11-10-9-8, 7-6-8-9-10, ..., 11-10-9-8-7 (720 transpositions); if the bracket is heterogeneous with two MDPs, it is: 3-4, 3-5, 3-6, ..., 3-11, 4-3, 4-5, ..., 11-10 (72 transpositions)).*

#### **4.3 Exchanges in Homogeneous Brackets or Remainders (original S1 ↔ original S2)**

- 4.3.1 An exchange in a homogeneous bracket (also called a resident-exchange) is a swap of two equally sized groups of BSN(s) (*all representing resident players*) between the original S1 and the original S2.
- 4.3.2 In order to sort all the possible resident-exchanges, apply the following “comparison rules between two resident-exchanges” in the specified order (*i.e. if a rule does not discriminate between two exchanges, move to the next one*).
- 4.3.3 The priority goes to the exchange having:
- 1) the smallest number of exchanged BSN(s) (*e.g. exchanging just one BSN is better than exchanging two of them*).
  - 2) the smallest difference between “the sum of the BSN(s) moved from the original S2 to S1 and the sum of the BSN(s) moved from the original S1 to S2” (*e.g. in a bracket containing eleven players, exchanging 6 with 4 is better than exchanging 8 with 5; similarly exchanging 8+6 with 4+3 is better than exchanging 9+8 with 5+4; and so on*).
  - 3) the highest different BSN among those moved from the original S1 to S2 (*e.g. moving 5 from S1 to S2 is better than moving 4; similarly, 5-2 is better than 4-3; 5-4-1 is better than 5-3-2; and so on*).
  - 4) the lowest different BSN among those moved from the original S2 to S1 (*e.g. moving 6 from S2 to S1 is better than moving 7; similarly, 6-9 is better than 7-8; 6-7-10 is better than 6-8-9; and so on*).

#### **4.4 Exchanges in Heterogeneous Brackets (original S1 ↔ original Limbo)**

- 4.4.1 An exchange in a heterogeneous bracket (also called a MDP-exchange) is a swap of two equally sized groups of BSN(s) (*all representing MDP(s)*) between the original S1 and the original Limbo.
- 4.4.2 In order to sort all the possible MDP-exchanges, apply the following “comparison rules between two MDP-exchanges” in the specified order (*i.e. if a rule does not discriminate between two exchanges, move to the next one*) to the players that are in the new S1 after the exchange.
- 4.4.3 The priority goes to the exchange that yields a S1 having:
- 1) the highest different score among the players represented by their BSN (*this comes automatically in complying with [C7] (see Article 3.4.2), which says to minimise the PSD of a bracket*).
  - 2) the lowest lexicographic value of the BSN(s) (sorted in ascending order).

#### **4.5 Next Element (follow-up of all Articles 4.2 to 4.4)**

- 4.5.1 Any time a sorting has been established in accordance with Articles 4.2 to 4.4, any application of the corresponding article will pick the next element in the sorting order.

## 5. Colour Allocation Rules

5.1 The initial-colour is the colour determined by drawing of lots before the pairing of the first round.

5.2 For each pair apply (with descending priority):

5.2.1 Grant both colour preferences.

5.2.2 Grant the stronger colour preference. If both are absolute (topscorers, see Article 1.7) grant the wider colour difference (see Article 1.6).

5.2.3 Alternate the colours to the most recent time in which one player had white and the other black.

*Note: Always consider Article 4.5 of the General Handling Rules for Swiss Tournaments.*

5.2.4 Grant the colour preference of the higher ranked player.

5.2.5 If the higher ranked player has an odd pairing number, give them the initial-colour; otherwise give them the opposite colour.

*Note: Always consider the Initial Order and Late Entries sections of the General Handling Rules for Swiss Tournaments for the proper management of the pairing numbers.*