

CHAPTER 3: ANTI-CHEATING REGULATIONS

Approved at the Abu Dhabi 1st FIDE Council meeting in 2022

I. Purpose, Guiding Principles, Definitions

1. These regulations deal with the investigation of suspected cheating incidents and other fair play violations. It supplements and clarifies the provisions of the FIDE Charter, the FIDE Ethics and Disciplinary Code, and the Procedural Rules of the Fair Play Commission.

2. “Cheating” in these regulations means:

a) the deliberate use of electronic devices (Art. 11.3.2 FIDE Laws of Chess) or other sources of information or advice (Art. 11.3.1 FIDE Laws of Chess) during a game; or
b) the manipulation of chess competitions such as, including but not limited to, result manipulation, sandbagging, match-fixing, rating fraud, false identity, and deliberate participation in fictitious tournaments or games

The FIDE Laws of Chess have introduced provisions against cheating. Specifically:

12.2 The arbiter shall:

12.2.1 ensure fair play.

12.2.7 follow the Anti-Cheating Rules or Guidelines

It means that it is the Arbiter’s duty to avoid the cheating by the players.

The Laws also explicitly forbid electronic devices:

11.3.1 During play the players are forbidden to use any notes, sources of information or advice, or analyse any game on another chessboard.

11.3.2.1 During a game, a player is forbidden to have any electronic device not specifically approved by the arbiter in the playing venue. However, the regulations of an event may allow such devices to be stored in a player’s bag, provided the device is completely switched off. This bag must be placed as agreed with the arbiter. Both players are forbidden to use this bag without permission of the arbiter.

11.3.2.2 If it is evident that a player has such a device on their person in the playing venue, the player shall lose the game. The opponent shall win. The regulations of an event may specify a different, less severe, penalty.

11.3.3 The arbiter may require the player to allow his clothes, bags, other items or body to be inspected, in private. The arbiter or person authorised by the arbiter shall inspect the player, and shall be of the same gender as the player. If a player refuses to cooperate with these obligations, the arbiter shall take measures in accordance with Article 12.9. Tournament organizers are also free to introduce their own regulations and conditions for events, provided they are in accord with the Laws of Chess.

3. Online cheating may also be deemed to have occurred when statistical evidence is insufficient to substantiate assumed cheating, but there is additional evidence that the individual may have cheated e.g. video evidence, GM opinion, and other situational factors (Suspected fair play violation).

4. Other fair play violations are:

a) Over the board rule violation: OTB rule violations include a variety of infractions that occur over the course of the tournament. This includes bringing a phone into the playing hall, bringing other forbidden gadgets into the playing hall (e.g., wallets, smart glasses, pens, watches), being uncooperative with the Arbiter, refusing to be searched or scanned. The list of OTB rule violations is not exhaustive.

b) Online technical rule violation: Technical violations connected with the video conference system used to supervise the competition, for example, disconnections, playing without a camera on, playing without shared screen with a taskbar, playing without a microphone on (if it is required by regulation of competition) per se does not lead to the assumption that a cheating offense has been committed, however, the player can be penalised accordingly.

5. Assumed cheating:

There shall be a presumption of cheating if statistical analysis by a FIDE validated and approved algorithm and/or other methodology applied to a player's performance in a single game, or a series of games or tournaments in competitive play shows a Z-score (reflective of the deviation between the player's actual performance and the projected fair play for a player having comparable Elo rating) above the official Z-score threshold. In such a case, if FIDE institutes disciplinary proceedings against the player in question, the burden to rebut the presumption of cheating and show his or her innocence shall be on the player.

6. Thresholds

The Z-score measure of unlikelihood is commonly used in science and can be a composite of several results. Currently, only Dr. Kenneth W. Regan methodology is approved. In order to provide a statistical judgment, Dr. Regan's model uses three separate statistical tests, each producing a z-score to indicate deviation from the projected performance: MoveMatching (MM), Equal-top value moves (EV) and Average Scaled Difference (ASD). The outcomes of the MM, EV, and ASD tests are further combined into a single overall Z-score. The notion of Z-score is not limited to the methodology of Dr. Kenneth W. Regan. Results from other approved methodologies can be cast as Z-scores, and then fall equally under the following proposed thresholds:

a) For online chess, a threshold of 4.25. This represents a natural frequency of 0.000011, one-in-almost 100,000. Considering the observed rate of cheating in online chess, this yields appraised odds about 1,000-to-1 against the null hypothesis of fair play, toward the high end of the 99% to 99.9% confidence range regarded as meeting the CAS criterion of "comfortable satisfaction" in the context of chess.

b) For over-the-board chess, a threshold of 5.00. This represents a natural frequency of one-in-almost 3.5 million, and is similarly placed with regard to an in-person observed cheating rate. These provisions apply if there is no other evidence. If such evidence is available, a Z-score of 2.50 or higher may be used in support.

7. False accusation: Reckless or manifestly unfounded accusation of chess cheating is a serious violation of the requirement of fair play. False accusation in chess is an abuse of freedom of expression that is prohibited by the FIDE Ethics and Disciplinary Code. 8. For the purposes of this regulation, attempts at cheating will be considered cheating.

II. Jurisdiction

1. The Fair Play Commission (FPL) has jurisdiction in all cheating-related matters, including false accusations. People subject to FPL jurisdiction include players, supporting persons, and team captains. Supporting persons include, but are not limited to, heads of delegations, seconds, trainers, managers, psychologists, organizers, spectators, relatives, journalists, chess officials, arbiters when involved in cheating incidents.

2. All FIDE-rated over the board games are subject to FPL jurisdiction.

3. Online chess falls under FPL jurisdiction for official FIDE competitions. For such tournaments, the provisions of Appendix 1 of the FIDE Online Chess Regulations shall apply in addition.

4. All cheating incidents occurring in tournaments that require maximum and increased levels of protection (as defined in the Anti-Cheating Protection Measures) must be reported to FPL. However, FPL may decide to refer a cheating incident that occurred in such tournaments to a National Federation (NF).

5. Cheating incidents occurring in tournaments that require standard levels of protection (as defined in the Anti-Cheating Protection Measures) are to be referred to NFs, except when the cheating incident affects the awarding of a WFM/FM title, and/or involves a person, either as claimant or respondent, holding the WFM/FM, WIM/IM or WGM/GM title. Such cases must be reported to FPL as well.

6. When an investigation is referred to a NF, the NF will investigate the case and apply those sanctions they deem proper. NFs are required to notify FPL of their decisions together with the evidence considered during the proceedings. The FPL may adopt this NF decision and/or refer the case to EDC. If the FPL does not adopt the NF decision, then the sanction will only apply at the national level.

7. While FPL has jurisdiction as detailed under Section II, National Federations are expected to create their own Anti-Cheating regulations and systems.

III. Complaints and Investigations

A. TRIGGERING AN INVESTIGATION

1. Investigations can be initiated based on a complaint:

- a) an In-Tournament Complaint (“ITC”);
- b) a Post-Tournament Complaint (“PTC”).

2. Investigations can also be triggered by:

- a) a report of the chief arbiter of a tournament;
- b) FPL initiative;
- c) a request by the Ethics and Disciplinary Commission (EDC) or any other body of FIDE authorized by the FIDE Charter.

B. COMPLAINTS

1. Any person having a FIDE Identity Number can file a complaint.
2. All Complaints must be submitted in writing and addressed to the FPL through FIDE Office.
3. In- and Post-Tournament-Complaints must be filed via the relevant Complaint form (Annexes A-B). If a complaint does not meet this requirement, the complainant will be asked to submit the form within a specified period of time. If this does not happen, the chairperson of the FPL shall reject the complaint as inadmissible.
4. The complainant shall provide all the information required in the Complaint Form and must detail the reasons why the Complaint is being made, listing all basis available at the time of filing.
5. Oral or informal Complaints are not accepted.
6. In-Tournament Complaints must be delivered to the chief arbiter. Upon receipt of an ITC, the chief arbiter shall
 - a) inform the complainant about the penalty for filing a manifestly unfounded ITC;
 - b) take steps to investigate the case in the usual manner, with reference to Article 12.9 for possible penalties;
 - c) forward the complaint and his report including all findings to the FPL through FIDE Office. If the chief arbiter comes to the conclusion that the ITC is unfounded he may dismiss the complaint during the tournament, subject to his duties under III.B.6.c above. The player retains the right to file a Post-Tournament Complaint on the same incident.
7. When a Post-Tournament Complaint is filed, the complaint must contain explanation of why an ITC was not filed earlier.
8. All Complaints shall list all basis available at the time of filing.
9. All Complaints based solely on the assumption that a person is playing stronger than expected due to his/her rating will be considered manifestly unfounded.
10. FPL may initiate an investigation based on any piece of information that may come into its knowledge regarding a possible cheating incident, including false accusation.
11. When an investigation is triggered by a request by EDC or any other body of FIDE authorized by the FIDE Charter, FPL shall act as a Fact-Finding Committee of the triggering body.
12. All information about complaints and investigations shall remain confidential until an investigation is completed by the FPL. In case of breach of confidentiality requirements by complainants or the Chief Arbiter or any other person with

knowledge of the complaint or the investigation before the investigation is completed, the FPL can refer all offenders to the EDC.

IV. Investigation Procedure

1. When a cheating incident is brought to the attention of the FPL, an Investigatory Panel (IP) or an Investigator can be nominated to investigate it.
2. FPL has the right to perform preliminary investigations with respect to any alleged or possible case of cheating-related violation.
3. If a complaint is inadmissible or manifestly unfounded on its face, the FPL may reject it by a majority vote. III.B.3 remains unaffected.
4. The IP will consist of up to three FPL members. The nominated IP members then select an IP Chairman.
5. The IP shall consider the presented physical and observational evidence. It will also consider the statistical evidence gathered as part of the investigation. It can also gather additional evidence in the course of its investigation.
6. Players, organizers, arbiters, national federations, and other parties are all required to cooperate with the IP. Failure to do so may result in a referral to EDC.
7. The IP should investigate each case within a reasonable time.
8. The burden and standard of proof are governed by Art. 16.13 - 16.16 of the Ethics and Disciplinary Code.
9. If the IP comes to the unanimous conclusion that no cheating occurred or there is not enough evidence to meet the standard of proof, it shall dismiss the complaint and inform the Chairman and the Secretary of FPL, the complainant, and the accused person with a brief note. If the National Federation of the accused person was involved, it will be informed as well. If an investigator is appointed, IV.10 applies instead.
10. When a conclusion other than unanimous dismissal is reached, at the end of the investigation the IP shall:
 - a) prepare a report indicating: the action that triggered the investigation, the factual circumstances of the incident, the findings of the investigation, and a proposed sanction. The report may cover any other breach of FIDE regulations found by the IP and
 - b) present the decision and report to FPL for consideration. FPL may ask the IP to consider additional facts and/or carry out further investigations.
11. Once a report is deemed final by the IP, FPL decides by a majority vote if the case is to be forwarded to EDC for judgement. If the case is not forwarded to EDC, it is considered to be dismissed. The FPL shall forward its findings to the complainant and the accused person. If the National Federation of the accused person was involved, it will be informed as well.
12. When the IP is acting on behalf of EDC, it shall present a preliminary report to FPL for consideration. FPL may ask the IP to consider additional facts and/or carry out further investigations. Once the report is deemed final by the IP, FPL shall transmit it to EDC.

13. In case of a violation of the fair play rules other than cheating and in case of assumed cheating, the regulations for the “Fast Track Procedure” applies (see Art. 9.3, 9.4, 9.5, and 9.7 of the Ethics and Disciplinary Code and Art. 32 – 36 of the Procedural Rules for the Fair Play Commission).

V. Manifestly Unfounded Accusations

1. An accusation of cheating that is manifestly unfounded, i.e. based only on emotion and/or insufficient data, is a false accusation. An accusation of cheating that is based on factual circumstances that would lead a reasonable person to believe that there is a reasonable chance of cheating is not considered a manifestly unfounded accusation.
2. When the FPL determines that an ITC or a PTC is manifestly unfounded, the complainant can receive a warning by the FPL.
3. In particularly severe cases of unfounded accusations, the FPL will forward the case to EDC.

VI. Provisions About the Procedure

1. The statute of limitation is eight years, in online events one year after the last round of the tournament in question.
2. The working language of the IP is English. The IP may, at the request of any party, authorize a language other than English to be used by the parties involved. In that occurrence, the IP may order any or all of the parties to bear all or part of the translation and interpreting costs. The IP may order that all documents submitted in languages other than English shall be filed together with a certified translation in the language of the procedure.
3. When the IP does not unanimously dismiss a case, the accused person must have been informed in writing (whether by letter, e-mail, or otherwise) of the pending case and given the right to present to the IP any statements and documents in support of his/her position.
4. The complainant and the accused person have the right to be represented or assisted by persons of their choice.
5. Documents pertaining to the proceedings should be submitted in writing, preferably by e-mail.
6. Each party involved in an investigation is responsible for its own costs directly or indirectly associated with the case.
7. When a person subject to the disciplinary jurisdiction of another FIDE Commission is a party to an investigation, FPL may provide the relevant information to that FIDE Commission.

Some Points for Arbiters:

According to the Article 11.3.3 of the FIDE Laws of Chess, the arbiter may require the player to allow his/her clothes, bags, or other items to be inspected, in private. The arbiter, or a person authorized by the arbiter, shall inspect the player and shall be of the same gender as the player.

Such searches are illegal in some countries. Arbiters should not engage in any fair play procedures which go against the laws of the country.

Usually the arbiter will inspect a player as described in Article 11.3.3 of the Laws of Chess only in case of suspected breach of AC regulations or after receiving an official In-Tournament Complaint, but only after coming to the conclusion that the complaint is not evidently unfounded. The arbiter, and any other person conducting the inspection, should be calm, polite and discreet. The inspection of a player should be carried out in a separate room, again by a person of the same gender. Only this person, the player, and one witness (also of the same gender) may have access to this room during the inspection. The player is entitled to select a second witness of his own choice (of either gender). If there is no matter of urgency, the inspection of a player and his/her belongings should generally be carried out before or immediately after the end of the game. Still, the arbiter should be aware that it is possible to hide electronic devices somewhere in or near to the playing venue, or to give them to a third party shortly before the end of the game. The arbiter also has the right to check a player who has left the playing venue during a game, or upon request of a player who filed an In-Tournament Complaint, but only once during the round. Only if the suspicion of cheating is overwhelming and/or there is a strong reason to believe that evidence will be destroyed before the end of the game should a player be searched during a game. If the player is innocent then the disturbance caused will have unsettled him and may affect his performance in the remainder of the game.

Any accusation made should be treated seriously and investigated fully. The player making the complaint should be told not to tell anyone else of his suspicions as that could contaminate any evidence e.g. word could get back to the suspect that he was being watched.

It is acceptable for an arbiter to ask players if they have seen anything that concerns them. It is NOT acceptable for the arbiter to ask players if they have seen Player X do anything suspicious. Any questions put to other players should not identify the suspect.

If a player has genuine concerns about another competitor, and does not share that opinion with other players, then no action should be taken against the player making the accusation. Where the accusation is malicious or is shared with other players, especially when it starts a vendetta, the player making the accusations should be punished severely and reported to FIDE.

ANTI-CHEATING PROTECTION MEASURES

Approved at the Batumi 2018 Fide Congress

The text has been slightly modified in early 2020 to reflect the changes in the Fide Charter. Consequently, the Anti-Cheating Commission (ACC) is now called Fair Play Commission (FPL).

Section 1 – Levels of protection

All FIDE-rated events need to adopt Anti-cheating protection measures for fighting cheating attempts (AC Protection Measures), based on the following distinction:

(A) Events that require maximum levels of protection: FIDE Level 1 events (Official FIDE events as defined by the FIDE Events Commission or FIDE World Championship and Olympiad Commission); Round-robins with an average rating of 2600 or more (2400 for Women's events); Events with prize funds in excess of EUR 100,000.

(B) Events that require increased levels of protection: FIDE Level 2 events (Competitions where FIDE (W)GM and (W)IM titles and title norms can be earned); Events with prize funds in excess of EUR 20,000; Round-robins with an average rating of 2400 or more (2200 for Women's events);

(C) Events for which standard levels of protection may suffice: FIDE Level 3 events (FIDE Rated Competitions) where the remaining over the board FIDE titles and title norms can be earned.

For National Championships, National Teams Championships and National Junior/Youth Championships organizers are required to adopt a level of protection one level above that required for an equivalent non-championship event. Anti-cheating measures will vary across categories in order to take account of the different economic impact of such measures.

The list of measures is specified under "Prevention" below. Organizers are responsible for implementing the AC Protection Measures set forth herein. The Chief Arbiter has a duty to check that the tournament is compliant with the AC Protection Measures.

The Chief Arbiter's tournament report shall disclose any and all breaches of the AC Protection Measures requirements.

Failure to comply the AC Protection Measures and/or to check and report on such compliance will be deemed as a major failure and may be brought before the relevant Commission.

Section 2 – Prevention

Tournament organizers shall adopt one of the three levels of the AC Protection Measures: standard protection, increased protection, or maximum protection. These levels of protection are to correspond with the three types of tournaments identified in Section 1.

Compliance with the AC Prevention Measures is mandatory. All organizers shall inform FIDE Qualification Commission (QC) and/or their National Federation that

they are complying with the AC Prevention Measures, by so stating in the Tournament Application form.

Upon request from a tournament organizer and based on good cause, the National Federation and/ or Fide QC may grant a waiver from some of the requirements enumerated below to tournaments with Standard or Increased levels of protection. The waiver request must be submitted in advance and describe adequate anti-cheating measures that are tailored to the tournament's size and budget. The organizers are not limited on the number of waivers they can submit.

Tournaments that are found not to materially comply with the AC Protection Measures shall not be rated.

In Tournaments designated for increased or maximum levels of protection, a special Anti-Cheating Arbiter may be employed. An Anti-Cheating arbiter is an arbiter who is entrusted with anti-cheating tasks (and who may have received special anti-cheating training) and must be equipped with at least one hand held scanner. The employment of the Anti-Cheating Arbiter is mandatory in tournaments that require maximum level of protections.

An arbiter should know how to recognise behaviors and devices involved in cases in the past. The definition of cheating according to Article 11.3.1 of the Laws of Chess includes

*i) accepting information by another person (spectator, captain, co-player, etc.); and
ii) getting information from any source of information or communication (such as books, notes, etc., or any electronic device).
The use of a mobile phone hidden in a pocket is forbidden according to Articles 11.3.2.1 & 11.3.2.2 of the Laws of Chess, so an arbiter needs to know how to find hidden mobile phones and other electronic devices.*

Organizers of events designated for increased and maximum protection are strongly encouraged to consult with the FPL on finding adequate AC measures that are tailored to the tournament's size and budget. FPL's decision following contact by the organizers and subsequent consultation with WCOC and/or any other relevant Fide Commission is final.

The arbiter must have a discreet control of the players who are leaving the playing area very often, for their contact with other players, spectators and other persons, according to Article 11 of the Laws of Chess. The arbiter should be aware that in some cases a player can get information from a third party. The arbiter should prevent any contact between players and spectators such as talking and/or giving/receiving signals. The arbiter should never tolerate the use of chess programs in the playing venue. Finding that a player or spectator is using a chess program in the playing area calls for immediate action in conjunction with the Chief Arbiter. During a tournament, the arbiter is encouraged to use the FIDE screening tool with PGN games, since that tool can identify cases needing further attention or, more likely, show that a player is not to be considered suspicious based on his or her games.

It is intended that this screening tool will be available to all Chief Arbiters. This is not yet the situation but any CA with suspicions about a player should immediately contact the Fair Play Commission.

There have been instances where a player has been accused of getting external advice. In some of these cases rather than the player accused playing at a higher than expected level it has been the opponents playing below their best. Putting the games into a normal chess engine may determine if further investigation is necessary however might not be used as final conclusion for cheating

Section 3 – Different standards of AC Protection Measures

1) Standard protection - to apply to tournaments identified in Section 1 (C).

- i) Organizers must clearly and carefully designate areas for players (the “Playing Area”) and for spectators. Organizers and arbiters shall prevent getting any chess information from outside the “Playing Area”. Organizers shall endeavour, in so much as possible and reasonable, to avoid contact between players and spectators. If possible, provide separate refreshment/toilet/smoking areas for players and spectators (in team competitions, this should be extended to include captains as a separate category);
- ii) Adopt at least one security measure from Annex A;
- iii) Recommendation to send all available games in PGN format for screening by the FIDE Game Screening Tool. Obligation to send norm-related tournament games in PGN format for screening by the FIDE Internet-based Game Screening Tool;
- iv) When registering the tournament with the FIDE QC, organizers are required to confirm that they are in compliance with the AC Prevention Measures. Waivers can be granted solely by National Federations and must be requested at least 4 weeks before the start of the tournament;
- v) The chief arbiter is encouraged to devise a system for operating random checks during the game.

2) Increased protection - to apply to tournaments identified in Section 1 (B).

- i) Organizers must clearly and carefully designate areas for players (the “Playing Area”) and for spectators. Organizers and arbiters shall prevent getting any chess information from outside the “Playing Area”. Organizers shall endeavour, in so much as possible and reasonable, to avoid contact between players and spectators. If possible provide separate refresh- - 3 - ment/toilet/smoking areas for players and spectators (in team competitions, this should be extended to include captains as a separate category);
- ii) Each tournament must adopt at least two security measures from Annex A.
- iii) The chief arbiter must devise a system for regularly checking the venue, before during and after the game, in cooperation with the Head Anti-Cheating arbiter (if any).

iv) Recommendation to send all games in PGN format for screening by the FIDE internet-based Game Screening Tool. Obligation to send in norm-related tournament games in PGN format for screening by the FIDE Game Screening Tool;

v) Organizers applying for waivers must do so with FIDE QC, at least 4 weeks before the start of the tournament. Waivers shall be granted only by FIDE QC;

vi) Organizers are strongly encouraged to provide secure storage facilities for electronic devices; vii) Organizers and arbiters are encouraged to carry out screening tests during the event via the FIDE Internet-based Game Screening Tool. viii) The chief arbiter is encouraged to devise a system for operating random checks during the game, in cooperation with the Head Anti-Cheating arbiter (if any).

3) Maximum protection - to apply to tournaments identified in Section 1 (A).

i) Organizers must clearly and carefully designate areas for players (the “Playing Area”) and for spectators. Organizers and arbiters shall prevent getting any chess information from outside the “Playing Area”. Organizers shall endeavour, in so much as possible and reasonable, to avoid contact between players and spectators. If possible provide separate refreshment/toilet/smoking areas for players and spectators (in team competitions, this should be extended to include captains as a separate category);

ii) Watches, pens and other writing devices containing metal are not allowed in the playing area. However, these items can be stored in the facilities under v) below. Each tournament must adopt at least two security measures from Annex A. Additional security in the form of FPL-certified metal detectors/X-ray machines, scanners, manned by qualified security staff, subject to applicable restrictions in each individual jurisdiction, is strongly recommended;

iii) The chief arbiter must devise a system for regularly checking the venue, before during and after the game, in cooperation with the Head Anti-Cheating arbiter (if any).

iv) Obligation to send in all available tournament games in PGN format for screening by the FIDE Game Screening Tool. For Rapid and Blitz events, the requirement is downgraded to a recommendation;

v) Organizers are required to identify the anti-cheating measures used, when registering the tournament with the FIDE QC.

vi) Organizers are required to provide secure storage facilities for electronic devices;

vii) Organizers and arbiters are strongly encouraged to carry out screening tests during the event via the FIDE Internet-based Game Screening Tool;

viii) The chief arbiter must devise a system for operating random checks during the game, in cooperation with the Head Anti-Cheating arbiter (if any). - 4 - These requirements apply where Tournament Specific Anti-Cheating Requirements (TSACR) have not been drafted by FPL and accepted by WCOC. When these TSACR exist, all provisions herein shall be superseded by the provisions in that document. Whenever TSACR are required, organizers are requested to consult with FPL to identify the best possible measures.

Annex A

The following technical equipment is recommended for cheating prevention, according to the level of the tournament and to local laws:

- hand-held security metal detectors;
- one or more additional anti-cheating arbiters;
- walk-through metal detectors;
- automatic electro-magnetic screening devices for metallic/non-metallic items;
- closed circuit cameras.

An arbiter should know how to use devices like hand-held metal detectors and other equipment. If a metal detector gives a signal it is important to establish the reason. In some FIDE Events, it is the job of Fair Play Officers

In most cases, a hand-held metal detector will prove enough to secure that electronic devices are not being carried into the playing venue, and should thus always be considered as the first-choice device for maximum protection. When two measures are required, it is strongly suggested to appoint an additional anti-cheating arbiter.

FIDE is entitled to buy extremely sophisticated anti-cheating equipment for use in sample checks, whose features it will not disclose. This equipment may be used by AC-empowered commission members during on-site inspections.

Many tournaments will use hand scanners to test players returning from the toilets. This will find players who are carrying phones but will not catch a player who has hidden a phone. It is suspicious if players, on toilet visits, visit only the same cubicle. Such behaviour may be regarded as worth further investigation. If a player is frequently absent from the board the arbiter should note the move number. If the moves following an absence are then shown to have a high correlation with computer recommended moves this may help in building a case against the player.

Notes by Professor Ken Regan on the application of Statistical Evidence

This section doesn't form a part of FIDE Handbook. It applies for both Over the Board (OTB) and online events.

The following relates to this part of the outline:

Use of statistics

1. Private hint to the arbiter
2. Support physical evidence
3. Applying sanctions for unexplainable deviations (1 in 60 years)

I. Purposes of Statistical Results

The committee proposes that statistical analysis of moves in games will be applied in three different ways:

1. During competitions, when tests indicate a potential anomaly, it can give a hint to arbiters to watch certain players more closely.
2. During or after competitions, it can support physical or observational evidence accompanying a complaint.
3. Only with very high results, it can be primary evidence---for consideration and possible judgment by a central office after the event.

II. Statistical Tests

Several quantities can be tested: agreement with a computer's first move (called MM for move-matching), average error per move (AE), and variants that count moves tied for top as matched (TT) or those in the top 3 moves (T3). There are two kinds of statistical game-analysis tests, and they give different kinds of results.

1. A "quick test" runs an entire file of games to look for potential anomalies. Any strong engine can be used for this test. By current procedures, a standard 16-core web server can process on average 5--7 games per processor core per hour. Thus using 2 cores (of server or laptop), one can process 100--140 games in 10 hours. However, quick-test results can only be used for purpose I.1, that is, giving hints.
2. A "full test" uses Multi-PV mode to obtain reliable values for all available moves in a position, and its results can be used for all purposes. Currently it takes 4--8 hours per core per game, however. The committee is evaluating possibilities that may make this possible in real time at least for top boards while a competition is ongoing. For purpose I.3, however, the committee considers that a second, independent test must be done after the competition.

A full-test result is expressed as a *z-score*, which is a multiple of a standard "normal" deviation. Some simpler chess-specific thresholds such as "70% matching" have been suggested but they do not work. A *z-score* corresponds

to odds against a deviation of that or higher magnitude occurring “by chance.” By common civil convention the minimum z-score considered “significant” is 2.00, which corresponds to 43—1 odds.

III. Types of Arbiter Actions

Statistical results can help arbiters decide which actions to take, and not to take, before the event of a formal complaint.

1. *Unobtrusive actions* are those which ideally are not noticed by players, or any specific player. They may include stepped up watch (where it is not obvious that a particular player is being watched), the use of silent EF-detection equipment, monitoring a camera, and so on. Consultation in private and referring games for a full test also count as unobtrusive.
2. *“Orange Alert” actions* are still not revealing a specific player as target, but put the whole tournament on a heightened alert. These can include introducing a screening check at the entrance for a particular round, delaying transmission of moves for that round, increased “random” spot-checks, restricting spectators and player movements, and general increased surveillance that is obvious.
3. *Obtrusive actions* include requests to interview or search specific players, or surveillance obviously singling them out, or actions against specific spectators.

IV. Instructions for Using Statistical Evidence

If there is a formal complaint against a specific player, then this is already an “obtrusive” situation. And if there is already physical or observational evidence of someone cheating, then this is the same kind of situation. So this section deals with cases where the only information is statistical. The main principles are:

1. Any obtrusive action requires having a full test with a z-score.
2. If all players were equal before the tournament, then the z-score should be at least 3.00 to warrant an obtrusive action.
3. If a player was knowingly singled out before the tournament, then the standard civil significance threshold of 2.00 can apply, only for this player.
4. Quick-test results may be used for unobtrusive and “orange alert” actions.
5. In no case is 3.00 being used as a sole basis for judgment against a player---as detailed below that should require at least 4.50, perhaps safer 4.75 or 5.00. Nor is it a “prosecution”---it is merely a “warrant” for further action at the event site.

We do not have a quantitative rule for quick-test results; the examples below and general awareness of deviations (“Littlewood’s Law”) can inform the common sense of the arbiter. A reasonable idea is to use 70% matching for 2800 and subtract 1.5% for every 100 Elo, so that for instance 64% matching might be considered unusual for

a 2400 player, 61% for 2200, and so on. (These numbers add 12% to a linear fit of actual matching percentages shown in the paper by Regan-Haworth at the AAAI 2011 conference.) However, the player's games may vary in "forcing" quality, so that the true nature of the deviation is shown only by the full test.

The $z = 3.00$ threshold is appropriate for tournaments of about 50—150 players, which covers the majority of Opens. For more players there should be a somewhat higher threshold, such as 3.30 (which is 2,000—1 odds) for up to 400 players, so that the odds are no less than 5x the number of players.

An example of how this procedure can unfold is:

1. Quick-test indicates a potential anomaly after 2 or 3 rounds.
2. Full test gives z -scores above 2.00 from round 4, climbing to 3.00 by round 6 or 7.
3. Higher steps taken unobtrusively from round 4, then obtrusively in round 6 or 7.
4. The obtrusive action may yield physical or observational evidence, which in turn makes $z = 3.00$ sufficient to count as strong supporting evidence for judgment.

V. Process Apart From Observational Evidence

When there is no observational evidence, even after obtrusive actions, the Committee recommends that:

1. A z -score under 4.00 should be ignored. Such a deviation would expect to happen naturally more than once every six months. You may suppose yours to be the tournament at which it happened.
2. A score over 4.00 can be grounds for follow up queries and possible private investigation.
3. A score over 4.50, which is expected just once in six years, can be grounds for a public process. This threshold may be more conservatively placed at 4.75 (once in 20 years) or 5.00 (once in 70 years).

Point 3 is still under debate. In a larger sense, the Committee recognizes that no system is perfect, and catching 99 percent may entail error in 1 percent, but the high cost in human dignity is a greater factor when the only evidence is statistical. However, in the past with such high z -scores and even lower ones, other players or third parties have invariably noticed and aired comments in public anyway, so the situation becomes tantamount to having a complaint.

VI. Instructions for Considering Complaints

The attitude is that imposing a high standard for a would-be complainant will both educate the public about "normal" deviations and forestall cases of witch-hunting.

1. The arbiter shall not entertain a complaint unless and until it is made in writing, signed by the complainant, and complies with the next point if it applies.
2. If a complaint mentions move-matching to an engine, then there are several further requirements on the filer.
 - a. The filer must specify the procedure used to obtain the move-matching results, including the engine version used, the engine settings including hash-table size, the number of PVs, and the GUI and platform used.
 - b. The procedure for analyzing moves must be *regular*, so that others can carry out the same tests.
 - c. The filer must give the ranges of moves tested for each game, the rationale for the range (e.g. moves since novelty until overwhelming advantage, or a critical phase in the game), and the number of matches obtained. A claim such as “matched 10 moves in a row” must specify which moves.

If the arbiter receives a complaint submitted in private that does not meet these requirements, then the arbiter may inform the person of these requirements and invite a revision and re-submission. This shall not be considered a breach on the part of the person complaining. It shall, however, be considered a violation to release in public a complaint that does not meet these requirements.

VII. Instructions for Evaluating Complaints

A complaint shall be evaluated the same way whether it

- Is made by an opponent of the accused player, say after testing their game;
- Is made by a third party---another player or an observer;
- Is filed by the arbiter (or the Commission) based on procedures above.

The third bullet makes clear that the criteria for acting on and evaluating the complaint should be the same as outlined above:

- If the complaint has evidence from analysis of moves only, then it can be grounds for doing a full test of the games. No obtrusive action should be taken from such a complaint, however, without the z-score from the full test. As above, the z-score should be at least 3.00 if the accused player was not distinguished before the start of the event, and at least 2.00 in all cases.
- If it includes observational evidence, then it can be grounds for obtrusive action, with support from statistical results taken into consideration.

A complaint should be *dismissed* if it does not meet the above criteria. There are also two ways a complaint *may* be dismissed even if it includes observational evidence:

- The z-scores of all tests are below 2.00.
- The “Intrinsic Performance Rating” (IPR) computed by the full test is not appreciably higher than the player’s rating.

The latter has been instrumental for several “statistical exonerations” which have led to the awarding of delayed prizes. In another case, the IPR of a person who tied for first was 70 Elo *lower* than his rating, while the IPR of his opponents’ moves was several hundred points lower. The logic is that even if such a player were cheating on (say) 2—3 moves per game, getting Elo 3000+ value on those moves, the IPR on all other moves would then have to be *a hundred points lower still*, which makes no sense. In such a case the arbiter should be more critical of the behavioral claims made in the complaint---for instance, the player may just have been going out to smoke.

VIII. On-Site Judgments and Further Steps

1. *Under no circumstances shall a disqualification be made on-site based on statistical evidence alone.* As noted above, extreme z-scores in absence of observational evidence must be referred to the central committee for independent testing; this also reflects the principle of separating judgment from prosecution.
2. The purpose of obtrusive action taken on-site is to *determine whether a law of chess has been violated.* That, and only that, can be grounds for disqualification while a tournament is in progress.
3. If a violation is established during *or after* a tournament, the case may be referred to the Ethics Committee for further review and possible sanction.

[This is still leaving some “grey”, such as credible complaints that are not resolved on-site, but those things may just be “grey”.]