2023 Annual Report

FIDE Congress 2023

Author: Technical Commission

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Contents

1. Introduction

This report comprehensively outlines the activities and achievements of our commission for the period from November 10, 2022, to December 7, 2023. During this time, we have experienced an exceptionally dynamic phase, characterized by a series of significant endorsements and the successful completion of numerous projects, each detailed within the pages of this report.

Our team, composed of esteemed experts recognized as the best in their respective fields globally, has demonstrated an unparalleled commitment to excellence. It is with great pride and appreciation that I acknowledge their contributions; their expertise and dedication have been instrumental in driving our mission forward.

This year has been marked by substantial progress in several key areas, aligning with our strategic objectives. We have focused on innovation, inclusivity, and the advancement of the use of technology, ensuring that our actions not only resonate within our immediate sphere but also contribute positively to the broader chess community.

The following sections will provide detailed insights into our projects, the challenges we faced, the solutions we implemented, and the tangible outcomes of our efforts. This report not only serves as a testament to our hard work but also as a roadmap for future endeavours, laying the groundwork for continued success and advancement in our field.

In closing, I extend my heartfelt gratitude to our team of dedicated volunteers. Their relentless pursuit of excellence and unwavering commitment to our cause is not just commendable but also inspirational. It is indeed a privilege to collaborate with such a passionate and skilled group of individuals.

2. Internal Organization and Responsibilities

The main goal was to streamline the operations of the TEC (Technical Commission), concentrating on diverse facets concerning chess equipment, technology, and internal protocols. The TEC's activities are guided by distinct objectives set by the FIDE President for the 2022-2026 timeframe. These tasks encompass activities like assessing and defining advanced standards for equipment, updating venue prerequisites, partnering with external firms on cutting-edge technologies, enhancing broadcast methodologies, and digitizing FIDE services and protocols. To ensure efficiency, the TEC implemented internal procedures and principles.

2.1 Internal Organizational Chart

The TEC commission comprises 23 members, including the chairman, honorary chairman, secretary,

councillors, and general members. Each member holds a specific position with defined responsibilities.

No.	Position	Surname	Name	Federation	Email
1	Chair	Georgescu	Tiberiu	Romania	tiberiu.georgescu@frsah.ro
2	Honorary Chair	Filipowicz	Andrzej	Poland	filipowicz38@gmail.com
3	Secretary	Du Toit	Hendrik	South Africa	hendrik@brightedge.co.za
4	Councilor	Ricca	Roberto	Italy	ricca@rrweb.org
5	Councilor	Brustman	Agnieszka	Poland	abrustman@gmail.com
6	Councilor	Pahlevanzadeh	Mehrdad	Iran	pahlevanzadeh@outlook.com
7	Councilor	Al Taher	Sultan Ali	UAE	sultahir77@hotmail.com
8	Member	Akkour	Abdelfattah	Morocco	akkour@gmail.com
9	Member	Oen	Grant	USA	grant@charlottechesscenter.org
10	Member	Ni	Hua	China	nihua531@hotmail.com
11	Member	Nicula	Dinu-Ioan	Romania	nicudin004@yahoo.com
12	Member	Prohorov	Olexandr	Ukraine	prohorov@chessclub.lviv.ua
13	Member	Burstein	Almog	Israel	almogbu@walla.com
14	Member	Keles	Askin	Turkey	askinkeles@gmail.com
15	Member	Arasu	B.	India	arasub@gmail.com
16	Member	Milvang	Otto	Norway	sjakk@milvang.no
17	Member	Mushaninga	Fungirayiini	Zimbabwe	fungimush1999@gmail.com
18	Member	Held	Mario	Italy	mario.hev@gmail.com
19	Member	Nepando	Jolly	Namibia	jollynepando@gmail.com
20	Member	Karali	Tania	Greece	tkarali@windowslive.com
21	Member	Waithe	Rohan	Barbados	rohanwaithe@hotmail.com
22	Member	Smith	Russell	Trinidad & Tobago	seepoysmith@yahoo.com
23	Member	Abramov	Sergey	Russia	chessokcom@gmail.com

2.2 Departments

No.	Department	Head of Department	Workgroups
1.	SPP	Roberto Ricca	Pairing regulations
			Tie-break regulations
			Software for SPP
2.	Critical TEC	Mario Held	Board, Pieces & Clocks
			Venue Requirements Commission
			Broadcast technologies
3.	Support TEC	Mushaninga Fungirayiini	Digitalization - extern
			Digitalization - internal FIDE procedures (assisting other commissions)
4.	Development TEC	Arasu B.	Strategic Digitalization
			Developing advanced technologies for capturing games by active collaboration with companies (scoresheets, e-boards, gadgets with AI)
			Ensuring compatibility across technologies and e-platforms
5.	Management	Chairman & Secretary	Management Board
			Management and Procedure Workgroup
6.	Marketing & Communication	Tania Karali	Communication & Promotion
			Website & Social Media

2.3   Management Board

Some adjustments were made regarding internal organization, as can be observed the Management Board is composed of:

- Chairman – Tiberiu Georgescu
- Honorary Chair – Andrzej Filipowicz
- Secretary – Hendrik du Toit
- Councillors – Roberto Ricca, Agnieszka Brustman, Mehrdad Pahlevanzadeh, Sultan Ali Al Taher
- Head of Departments – Roberto Ricca, Mario Held, Mushaninga Fungirayiini, Arasu B., Dinu Ioan-Nicula (as head of Management and Procedure Workgroup) and Tania Karali.

3.   Meetings & Communications

3.1   FIDE Representatives

- The chairman and secretary had regular meetings or calls with GM Bologan.
- Regular email updates to GM Victor Bologan and WFM Sava Stoisavljevic.
- The chairman and secretary had numerous meetings and emails with other FIDE members.

3.2   Internal

- To appoint the head of departments, the chairman and secretary did the following:
  - Open an expression of interest, which consisted in a Google Form.
  - Conducted meetings with all interested parties.
- Chairman and Secretary are having several meetings/calls a week.
- Eighteen weekly Management meetings.
- Twenty-four departmental and workgroup internal meetings

3.3   Third Parties

- Numerous meetings with vendors that filed endorsement applications.
- Meetings with other third parties which were interested to gather more information regarding technical aspects were organized.

4.   TEC Annual Meeting in Bucharest

The Annual Meeting of the Technical Commission took place in Bucharest in 13-14th of May at Grand Hotel Bucharest, during the Grand Chess Tour – Superbet Chess Classic.

Part of the members attended in person and the others joined online. Besides the commission members, several guests during our meetings:

- Michael Khodarkovsky (FIDE Vice President)
- Victor Bologan (FIDE Executive Director)

- Vlad Ardeleanu (Romanian Chess Federation President)
- Alin Berescu (Romanian Chess Federation Vice President)
- Gabriel Grecescu (Romanian Chess Federation General Secretary)
- Alin Campeanu (Member of the Events Commission of FIDE).

See Annexure A - TEC Annual Meeting in Bucharest for full report.

5. Completed Endorsements

Technical commission conducted official evaluation reports to assist FIDE in the endorsement process. Below are described the main reports:

5.1 Millenium eBoards

5.1.1 Product Description

eBoards look like normal chess boards, but they contain electronics that identify which chess pieces are on which squares of the board, and this information can be transmitted via the Internet to an opponent who is also using an eBoard or who is playing on a virtual chessboard – on a device with a screen such as a laptop or a smartphone.

The purpose of using an eBoard is to have a completely screen-free playing experience - to enable a user to play chess with a real chess board and real pieces but without looking at a computer screen or using a computer keyboard. This enables an eBoard player to conduct their games in a completely intuitive and user-friendly way.

When we refer to "user-friendly" in this context we do not mean friendly for a computer-user, we mean friendly for a chess player. The same applies to "intuitive" – the process should be intuitive for a chess player who might not be an experienced computer user. So regular chess players will find the whole of the playing process intuitive - they should not have to consult a computer screen during a game, or to use a computer keyboard.

The Regulations don't cover all possible situations that may arise during a competition, but it should be possible for an arbiter with the necessary competence, sound judgement, and objectivity, to arrive at the correct decision based on his/her understanding of these Regulations.

5.1.2 Subcommittee

- Tiberiu Georgescu (Chairperson),
- Hendrik du Toit (Secretary),
- Agnieszka Brustman,
- Tania Karali,
- Shaul Weinstein (invited expert),
- Olexandr Prohorov, Rohan Waithe,
- Russell Smith, Arasu B,
- Mehrdad Pahlevanzadeh

5.1.3 Report

This report represents a detailed analysis on how Hybrid eBoards by Millenium 2000 GmbH can be used on hybrid events. During this report we will refer to the product as the eBoard. The analysis is performed considering the FIDE EBOARD CHESS REGULATIONS, published on November 8th, 2022, and the FIDE Rules for official tournaments. Our report is built considering the following recommendations:

1. The eBoard is used in hybrid events by both players.
2. Both players are playing under arbiter supervision
3. The players are not allowed to switch to using the computers.

5.1.4 See "Annexure D - Hybrid eBoards by Millenium 2000 Report" for the full report.

5.2 ID Chess

5.2.1 Product Description

idChess is an innovative AI solution for digitising and broadcasting chess games that are played offline. The tournament version of idChess allows you to broadcast games live on the internet or display them on screens and save them in PGN format after the game.

The tournament version consists of a web admin panel and phones connected to it with the idChess mobile application (Android, iOS). The computer vision technologies in the application, chess games are recognized through a camera in a smartphone. The device is fixed in a tripod, and the camera automatically recognizes the chessboard, then each move of a player is displayed on the screen. After that, games are saved and become available in the idChess application.

5.2.2 Subcommittee

- IA Hendrik du Toit (Secretary),

- IA Arasu B,
- NA Fungirayiini Mushaninga

5.2.3 Report

This report represents a detailed testing on the usage of idChess software application by Friflex. The analysis is performed considering the relevant articles of Section C of the FIDE Handbook. Our report is relying on the following assumptions:

1. Not all test devices are the same brand and/or model, but within the specifications.
2. Not all boards in the tournament are covered.
3. The necessary sections in the FIDE Handbook are changed/adapted. Standard chess equipment usage according to the FIDE Handbook.

5.2.4 See "Annexure E - IdChess Evaluation Report" for the full report.

5.3 DGT 2500

5.3.1 Product Description

The DGT 2500 clock has a display with large numbers, easy to see from great distances. It has 26 pre-set time controls and 10 slots for customised time controls. On the display are not other indications than the remaining time for each player. No ability to connect to the DGT Projects Electronic Chess Board.

5.3.2 Subcommittee

Dinu-Ioan Nicula, Tania Karali, Olexandr Prohorov, Tiberiu Georgescu (Chairman)

5.3.3 Report

This report represents a detailed analysis on how DGT 2500 clock is constructed and works. The analysis is performed considering the eligibility of the clock to be used in official chess competitions, to increase the variety of this type of device.

5.3.4 See "Annexure B - DGT 2500 Endorsement Report" for detail documentation.

5.4 ChessNoteR

5.4.1 Description of the Software

ChessNoteR V 2.3.2 is a simplified and innovative solution for digitising chess notation for games that are played offline. Black Mirror Studio have built a software "ChessNoteR" and deployed it on the customised operating system of two Android devices (NEXUS 6 & NEXUS 9).

1. ChessNoteR N6

    The ChessNoteR N6 features include 32GB or 64GB internal storage, a Qualcomm Snapdragon 805 @ 2.70Ghz Quad-Core Processor, with 3GB of RAM.

    A 5.96-inch screen @ 1440×2560 pixels and an internal 3220 mAh battery that supports turbocharging capabilities using a Micro USB Cable.

2. ChessNoteR N9

    The ChessNoteR N9 features include 16GB or 32GB internal storage, an Nvidia Tegra K1 @ 2.3GHz dual-core, with 2GB of RAM, an 8.9-inch screen @ 1536 x 2048 pixels and an internal 6,700 mAh battery using a Micro USB Cable.

Both the devices have the customised operating system which will have only the ChessNoteR software and the device settings. This makes the software and device more secure to use on the tournament conditions with the Fair play measures.

Options like tournament management and opponent management is handier for the players in the long run. The software has various board setting options and can connect to the computer to transfer the games.

5.4.2 Sub Committee

- IA Arasu B
- IA FI Dinu-Ioan Nicula
- IA Hendrik du Toit (Secretary),

5.4.3 Recommendation

We are happy to see the Black Mirror Studio reacting immediately and addressing the critical issues. We are looking forward to addressing the items listed in "as soon as possible" and "nice to have" sections in the next versions.

In general we are delighted by the technology and the prospects it brings to the game of chess. We believe ChessNoteR is an important effort towards developing chess.

5.4.4 See "Annexure L - ChessNoteR Endorsement Report" for detail report.

6. Completed Projects

6.1 Tie-Break Regulation Changes

6.1.1 Project Description

In November 2022, the Technical Commission successfully integrated the SPP Commission and its activities. This transition was marked by the establishment of robust internal organization principles, standards, and procedures. We restructured the commission into various departments and workgroups for better efficiency and oversight.

The tasks previously handled by the SPP Commission are now managed by the SPP Department, a dedicated unit within the Technical Commission. This department operates under the vigilant supervision of both the Chairman and the Secretary. Roberto Ricca, the head of the department, along with his team members, conducted a thorough review of the C.07 Tie-Break Regulations, set to be effective from 1 July 2023. During this review, they identified several critical issues that required resolution.

These issues were then collaboratively discussed with vendors and SPP experts for initial insights. Following this, a comprehensive analysis was undertaken involving the entire Technical Commission (TEC), all under the guidance and supervision of FIDE Executive Director Victor Bologan. This collaborative approach ensured a holistic and well-informed examination of the regulations and the necessary steps to address the identified concerns.

6.1.2 FIDE Management Board Approval

6.1.3 See Annexure C - Tie-Break Regulations Changes for documentation.

7. Endorsements in Progress

7.1 Move Keep

7.1.1 Product Description

Easy tournament management: Create either standalone tournaments or tournaments for you club or team.

Different tournament types: Round Robin, Swiss, and Double Round Robin tournaments are all supported.

Online pairings: Pairings can be viewed in-app, which means players don't need to huddle around a printout of them.

Online results: Results online by organisers or players and are immediately available for people to see.

7.1.2 Subcommittee

IA Roberto Ricca

7.1.3 Report

The evaluation is in progress.

7.2 AA Games & Toys – Endorsement of Pieces

This project has just been started and will progress further early 2024.

7.3 SCF Chess Clock Development

This project has just been started and will progress further early 2024.

7.4 WinTD

This project has just been started and will progress further early 2024.

8. Community Proposals

8.1 Alternative Scoring System

8.1.1 Proposal

A community member, Shivaji Mookerjee from Pune, India, observed during the 2023 World Chess Tournament in Baku that players' requirement to manually record each move on paper disrupts their concentration and wastes playing time. To address this, Mookerjee suggests that FIDE implements an automated system where the chessboard's positions are photographed automatically after each move, triggered by the clock timer levers. This would allow players to focus better on the game while still providing digital and hard copy records of the moves for post-game analysis and record-keeping. This suggestion aims to enhance the overall efficiency and focus of the game for players and administrators alike.

8.1.2 TEC Response

In response to Mr. Shivaji Mookerjee's proposal for electronic scoresheet keeping in chess, the FIDE Technical Commission has evaluated the suggestion and reached several conclusions. Firstly, manually recording moves is a critical part of the game, and time allowances for each move accommodate this practice. Scoresheets are also required as official records under the Laws of Chess.

The Commission noted that using video recordings for resolving disputes would be impractical and time-consuming, especially in tournament scenarios. Additionally, the transcription of these recordings for official documentation would be both costly and labour-intensive. Financially, the burden of implementing such a system would be significant, potentially challenging for many organizers and federations.

Furthermore, there has been no widespread dissatisfaction among players regarding the current system of scoresheet maintenance. In fact, players often refer to their scoresheets during games. Transferring the responsibility of scorekeeping from players to organizers could lead to legal complexities, especially if recording equipment fails or in the event of unverifiable claims.

Therefore, considering these factors, the Commission recommends not adopting the proposal.

8.1.3   See "Annexure G - Alternative Scoring System" for the full report.

8.2   Scoring Method (0, 0.25, 0.5, 0.75, 1)

8.2.1   See "Annexure K - Scoring Method (0, 0.25, 0.5, 0.75, 1)" for detail documentation.

9.   Current Projects

9.1   Tie-Break Rules Update

9.1.1   Project Description

The new tie-break rules came into effect on September 1, 2023. After all stakeholders started using them, the need for better clarification of some parts arose.

9.1.2   See "Annexure I - Tie-Break Rules Update" for documentation.

9.2   Tournament Entry Portal

9.2.1   Introduction

The Standardisation Task Force reached out regarding the issues faced by FIDE tournaments in the entry process. We have reviewed your concerns and proposed

solution, and we are excited to present a brief outlining the plan to develop an online entry portal for FIDE tournaments.

9.2.2 Objective

The objective of this project is to address the challenges associated with the current manual entry process for FIDE tournaments. By creating an online entry portal, we aim to streamline the entry process, enhance efficiency, and reduce administrative burden, freeing up valuable resources for other tasks.

9.2.3 Key Requirements

Based on the initial discussions, the following key requirements have been identified:

1. User Registration
2. Tournament Creation and Parameters
3. Contract Management
4. Administration and Reporting
5. Data Protection and Security
6. Integration
7. User Experience
8. Scalability and Performance
9. Accommodation
10. Payment System
11. Communication System
12. Transport & Travel
13. Reporting & Exports

9.2.4 Process

1. A comprehensive questionnaire was distributed to all essential role players for completion. This step is crucial in gathering diverse insights and perspectives.
2. From the responses obtained via the questionnaire, a detailed Technical Specification document, inclusive of well-considered recommendations, will be compiled. This document aims to encapsulate the collective feedback and suggestions from the key stakeholders.

3. The Technical Specification, along with its recommendations, will then be presented to the FIDE Management Board. The Board will utilize this document as a foundational basis to make informed decisions regarding the subsequent steps in the process. This approach ensures that the decision-making is guided by thorough research and community input.

9.3 DGT LiveChess Improvements

9.3.1 Project Description

Several bugs have been identified in the DGT Live Chess software, which is crucial for interfacing with DGT electronic boards. These issues were reported to FIDE through tournament organizers and have also been noted during tournaments by FIDE officials. We are actively collaborating with DGT to address these challenges. Most of these bugs are expected to be resolved in the upcoming release of DGT Live Chess 3.0.

9.3.2 See Annexure F - DGT Live Board Improvement for more information.

9.4 Team Pairing Rules

9.4.1 Project Description

The inclusion of a Team Pairing algorithm in the Pairing Rules has been sought for years. This is the first attempt to present a pairing system that can be applied to all FIDE team competitions.

9.4.2 Next Step

The publication of this algorithm is planned for the first quarter of 2024 or at the next Congress.

9.4.3 See "Annexure J - Team Pairing System" for documentation.

9.5 Changes to the Swiss Pairing Rules

9.5.1 Project Description

Some changes had been in the store since 2021. Others are more recent. These changes mainly concern the equivalence of a full-point bye with a win by forfeit (C.04.1), and some changes to the FIDE (Dutch) rules, mainly concerning the bottom pairings.

New section C.04.3 (which contains a reference to the changes in C.04.1), new text (file C04.3.pdf) and table of changes (file C04-TOC.pdf, with comments).

9.5.2 See "Annexure H - Changes to the Swiss Pairing Rules" for documentation and detail.

9.6 Vendor User Group

9.6.1 Project Description

In the TEC Annual meeting held in Bucharest, a significant resolution was passed to establish a Vendor User Group. This decision reflects our commitment to fostering closer collaborations and communications with key vendors in the industry.

9.6.2 Objective

The primary objective of this initiative is to enhance our engagement with vendors through various means:

1. Regular updates on new endorsements and developments.
2. Sharing and discussing Tie-break regulations.
3. Collaborating on Open-Source Projects.
4. Actively seeking and incorporating input and recommendations from vendors.
5. Engaging vendors in plotting future initiatives and outlining specific requirements, thereby aligning their expertise with our strategic goals.

9.6.3 First Meeting

The inaugural meeting of the Vendor User Group is scheduled to take place prior to the 2023 FIDE Congress. This meeting will serve as a foundational platform for establishing effective communication channels and kickstarting collaborative efforts with our vendor partners.

9.7 FIDE Endorsement Process

9.7.1 Project Description

Within the FIDE TEC, there is a crucial ongoing discussion distinguishing "Endorsement" from "Compliance." These concepts, often used interchangeably, have distinct legal and financial implications, and thus require separate handling.

Compliance refers to adhering to established laws, regulations, guidelines, or standards. It's about ensuring legal and ethical operations by following specific rules. In contrast, Endorsement is about expressing public approval or support, leveraging the credibility of an influential figure or entity to boost awareness and credibility of a product or service.

In essence, while compliance is about meeting legal obligations and mitigating risks,

endorsement leverages the reputation of the endorser for promotional purposes.

9.7.2 Next Steps

We need to clearly define three categories:

1. Handbook Compliant (Self-Declaration)

   - Vendors adhere to specifications in the FIDE Handbook.
   - No use of the FIDE Logo on equipment, documentation, or peripherals.
   - No FIDE TEC Commission testing required.
   - FIDE Technical Commission develops new specifications for the Handbook.
   - Vendors declare compliance with specific FIDE standards in their product documentation.
   - This category addresses complaints regarding equipment non-compliance with Handbook specifications.
   - Examples: Chess pieces, boards, clocks.

2. FIDE Approved

   - For innovations with no or partial specifications in the Handbook.
   - Specifications and testing requirements set by the TEC Committee.
   - FIDE TEC collaborates with other commissions to update the Handbook.
   - Three testers will test the equipment.
   - Approval doesn't grant rights to the FIDE Logo.
   - Examples: Configurable clocks, broadcasting products, pairing software.

3. Endorsed Product

   - Must comply with FIDE Handbook specifications.
   - Like "FIDE Approved" but includes rights to use the FIDE Logo.
   - Involves an endorsement/royalty agreement between FIDE and the vendor.
   - Examples: Chess pieces, clocks, broadcasting products, notation products, pairing software.

This structure will ensure clarity and precision in our endorsement and compliance processes, maintaining the integrity and reputation of FIDE and its associated products.

9.8 Open-Source Project

9.8.1 Project Description

This initiative is focused on engaging the broader public, specifically the developer community, in the evolution of chess-related software. The primary goals of the project are:

- To democratize access to Tie-Break and Pairing engines by making them available to developers worldwide. This open-source approach encourages a collaborative environment where diverse talents can contribute to the software's development.
- To standardize Tie-Break and Pairing engines, thereby ensuring consistency and reliability for the global chess community. This standardization will help align various chess software with uniform operational guidelines and expectations.
- To provide faster responses to changes in standards and regulations. The open-source model allows for agile adaptation to new rules and industry shifts, ensuring that the software remains current and effective.
- To expedite bug resolution through community involvement. By leveraging the collective expertise and vigilance of the developer community, bugs and issues can be identified and rectified more swiftly and efficiently.

9.8.2 Next Steps

The roadmap for implementing this open-source project includes several key phases:

1. Introducing the Project: Launching the project within the software development community to generate interest and encourage participation. This will involve outreach through various channels including developer forums, social media, and industry conferences.
2. Discussing Standards and Guidelines: Holding discussions and workshops to establish the standards, policies, and procedures that will govern the project. This step is crucial for ensuring that all contributors are aligned with the project's objectives and methodologies.
3. Establishing Infrastructure: Setting up the necessary technical infrastructure to support collaborative development. This includes source code repositories, project management tools, communication platforms, and documentation resources.
4. Developing Specifications: Collaboratively creating detailed specifications for the Tie-Break and Pairing engines. This will involve gathering requirements, defining functional and technical specifications, and ensuring compliance with chess regulations and best practices in software development.

5. Developing the Engines: The actual coding and development of the engines, driven by the community of developers. This phase will involve iterative development, testing, and refinement to ensure the software meets the desired quality and functional standards.

By adopting an open-source model, this project aims to foster innovation, ensure transparency, and leverage the global community's collective expertise to enhance chess software tools.

Annexure A - TEC Annual Meeting in Bucharest

The Annual Meeting of the Technical Commission took place in Bucharest in 13-14th of May at Grand Hotel Bucharest, during the Grand Chess Tour – Superbet Chess Classic.

1.   Program:

- Saturday, May 13th, 9:30-13:30 EET
- Sunday, May 14th, 9:30-13:30 EET

Part of the members attended in person, the others joined online. Besides the commission members, several guests during our meetings:

- Michael Khodarkovsky (FIDE Vice President)
- Victor Bologan (FIDE Executive Director)
- Vlad Ardeleanu (Romanian Chess Federation President)
- Alin Berescu (Romanian Chess Federation Vice President)
- Gabriel Grecescu (Romanian Chess Federation General Secretary)
- Alin Campeanu (Member of the FIDE Events Commission)

2. Decisions

- TEC will develop an elaborate manual regarding chess, clock, pieces, broadcast, venue.
- TEC will develop an Online Form for Endorsement Application
- Developing a new commission website
  - The current platform is not up to date in terms of technologies.
  - We will ask for more access on the server.
  - Discuss with FIDE technical representatives regarding server privileges.
- Define very clear the procedures of an Endorsement.
  - Categories
  - Different types of requirements for each category
  - Clear fees for different types of testing – each type of test is estimated in hours.
- The questions received from third parties will be split into three categories and each category will have clear procedures and answering flow.
  - Clear clarification – direct response
  - Clear answer with potential political implications – reviewed by FIDE representatives before sending.
  - Complex ones – reviewed by FIDE representatives before sending.
- Start testing programs for tie-breaks.

- Never tested in the past
- A proposal will be made to FIDE.
- Creating an Open-Source tie-break engine
- TEC is working on new tie-break regulations proposal.
- TEC will develop a guide on applying the tie-break rules.
- Apply for free software tools as NGO.
  - Official request to FIDE about certificate that we are NGO so we can ask for free software applications.
- Creating/improving commission procedures and standards
- Using new software tools to improve project management.
- Marketing strategy on promoting TEC activities.

End of Report
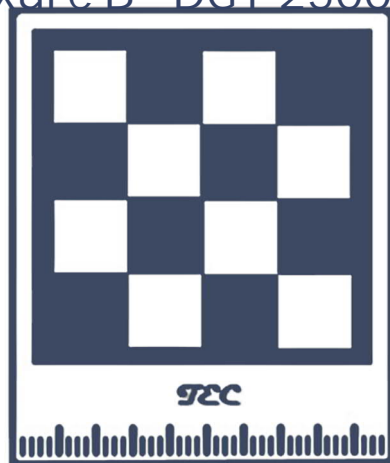
DGT 2500 Chess Clock

Evaluation Report

Author: Technical Commission

Subcommittee: Dinu-Ioan Nicula, Tania Karali, Olexandr Prohorov, Tiberiu Georgescu (Chairman), Hendrik du Toit (Secretary)

Document type	Decisional Report
Subject of Report	Endorsement of the DGT 2500 Chess Clock
Document version	2.0
Date	July 16th, 2023

Contents

Scope of the report

This report represents a detailed analysis on how DGT 2500 clock is constructed and works.
The analysis is performed considering the eligibility of the clock to be used in official chess competitions, to increase the variety of this type of device.

Product description of DGT Chess Clock

Manufacturer	DGT
Model	DGT 2500
Firmware version	-
Firmware release date	-
Model release date	-

Description of the DGT 2500 Clock

The DGT 2500 clock has a display with large numbers, easy to see from great distances. It has 26 pre-set time controls and 10 slots for customised time controls. On the display are not other indications than the remaining time for each player. No ability to connect to the DGT Projects Electronic Chess Board.

Practical Experience of Usage

a. Friendly events (home or the club)
   All three testers used the clock in friendly events, by playing themselves or with friends.

b. Official events
   Testing in official competitions was not possible. Testers received one clock each and the producer didn't officially launch the product, therefore at the time of our testing it was still a commercial secret.

3

Background

The evaluation process was conducted by three international arbiters, helped by the chairman and the secretary of the TEC Commission. Each of the three IA performed the tests individually and didn't communicate with each other during the tests. After the testers completed the documentation, online meetings were organised to compare the results. The findings were similar for all the three testers. Annex 1 presents a detailed report.

During last FIDE Council, the following decision was taken:

- *CM1-2023/25 To conditionally approve use of the DGT 2500 clock, pending confirmation of the Technical Commission that the lever system has been improved and the noise has been reduced.*

In consequence, the manufacturer produced an improved version and sent the new product to be tested. The new DGT 2500 arrived in Bucharest at the Romanian Chess Federation on June 15th.

IA Dinu-Ioan Nicula, as tester, performed further tests on the clock with the improved lever system following the aspects mentioned below.

- The older version of the DGT 2500 will be compared with the new version, one near the other
- The lever system was checked
- The other functionalities were checked to make sure the DGT chess clock has the same features.

Dinu Ioan Nicula consulted the subcommittee members, and the Technical Commission came to the following conclusion:

- *The recommendation for product DGT 2500 from testers as well as by the Technical Commission is to be approved for FIDE rated events.*

Conclusion

The Technical Commission has evaluated the DGT 2500 chess clock and determined that it meets all requisite criteria. Consequently, we advocate for its recognition as a FIDE Endorsed product.

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Annex 1. DGT 2500 -1st Evaluation Report

Document type	Report
Subject of Report	DGT 2500 Chess Clock
Document version	1.0
Date	February 16th 2023

Description of the DGT 2500 Block

The DGT 2500 clock has a display with large numbers, easy to see from great distances. It has 26 pre-set time controls and 10 slots for customised time controls. On the display are not other indications than the remaining time for each player. No ability to connect to the DGT Projects Electronic Chess Board.

Practical Experience of Usage

c. Friendly events (home or the club)

All three testers used the clock in friendly events, by playing themselves or with friends.

d. Official events

Testing in official competitions was not possible. Testers received one clock each and the producer didn't officially launch the product, therefore at the time of our testing it was still a commercial secret.

Comments

As expected from the DGT producer, the DGT 2500 is a robust chess clock, easy to use by the players and user-friendly for the arbiters to set different time controls and to adjust in various situations.

The time indications are very clear, they can be observed from 3 metres without any effort.

The clock has the option to turn on the sound for the last 5 seconds and to indicate with

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a sound when the flag falls, but also to turn off the sound.

There is a low battery indication, but no percentage can be seen.

In a situation where both players exceed the time, the clock shows which flag fell first. Also, it is possible to set the clock so both timers stop when a flag falls.

All the important time controls can be easily set. Also, the clock allows the Fischer increment system or Bronstein system.

There is an option of a quick time penalty, however, it may not be possible to be used in official events, because it doesn't eliminate the increment of the player who must be sanctioned.

The moves are not visible for the players, but the arbiter can check.

When using it in friendly games, the most important issue identified is regarding the sound of the move lever. When a player presses the lever, the sound is quite loud. Also, it is necessary to press harder compared to previous models. The sound aspect can become more inconvenient especially in official tournaments when there are many games in the same playing hall. A better amortisation system would help a lot.

Recommendation

We divided our recommendations into three categories: *critical/urgent*, important, and *nice-to-have*.

Critical/Urgent i.e. before any endorsement or recommendation

➢ Reducing the noise made by the levers (move buttons) when they are pressed.

Important

➢ None

„Nice-to-Have"

➢ Increasing the size of the font of the text on the back of the clock.

Conclusion

As expected from a top producer, the DGT 2500 is a popular type of electronic chess clock.

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It is probably designed to be a more affordable option than the DGT 3000, it is very user-friendly, with a well-written manual.

We recommend testing the clock in tournament conditions as well.

To be used in an official tournament we consider that it is necessary to improve the lever system, so the noise will be reduced.

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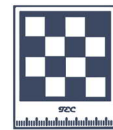
Appendixes

Annex 1. Testing Reports

A. Tania Karali

	Information	Comment
	Name of the clock	DGT 2500
	Name of tester	IA Tania Karali
	Period of testing	January – 2023

Test	Description	Comment
1	Is it possible to read the information on the displays at a distance of three meters from the clock?	Yes, indications are very clear
2	Does the clock have the ability to be included as part of an electronic chess board broadcast? If yes, was this assessed successfully?	Cannot be used with broadcast
3	Is it clearly visible which player is to move, from all sides of the clock?	Yes
4	Is there any sound given by the clock during or at the end of game? If yes, is it possible to switch the sound off?	Sound for last 5 seconds and flag fall. Can be switched on/off.
5	Is the clock speed equal with the normal time?	Yes
6	Is there a low battery indication or a battery percentage?	Low battery, no percentage
7	If the answer to test six is yes, is this indication shown immediately after the clock is set up?	Yes
8	Is it possible to change or delete indications of the clocks by default?	Yes, for example, No 1 can be set to 5/4 for Armageddon
9	Is there a short manual on the clock?	Yes, quite extended
10	Is the clock stable during use, especially when players are short on time?	Looks like yes
11	Did you make test ten under normal tournament conditions with at least five players?	No
12	Are the buttons used by the players sturdy enough?	Yes, but quite loud
13	Did you make test twelve under normal tournament conditions with at least five players?	No
14	If both flags fall, can you determine which fell first?	Yes
15	Do both clocks stop after a flag fall?	Optional freeze mode

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16	Did you have problems to correct the time shown by the display or to give penalties?	No
17	Did you have problems to change the move counter?	No
18	Are the following rate of play available as default modes:	
18.1	40 moves in 100 minutes + 20 moves in 50 minutes + 15 minutes and 30 second per move from move 1	Yes, No 18
18.2	40 moves in 90 minutes + 30 minutes with an increment of 30 seconds per move from move 1	Yes, No 16
18.3	Game in 90 minutes + 30 seconds per move from move 1	Yes, No 15
18.4	40 moves in 2 hours + 20 moves in 1 hour + 15 minutes and 30 seconds per move from 61 move	Yes, No 19
18.5	40 moves in 2 hours + 20 moves in 1 hour + 30 minutes	Yes, No 6
18.6	40 moves in 2 hours + 30 minutes	Yes, No 4
18.7	Game in 60 minutes	Yes, No 3
18.8	40 moves in 2 hours + 1 hours	Yes, No 5
18.9	Game in 15 minutes + 10 seconds per move	Yes, No 13
18.10	Game in 25 minutes + 10 seconds per move	Yes, No 14
18.11	Game in 25 minutes	Yes, No 2
18.12	Game in 3 minutes + 2 seconds per move	Yes, No 9
18.13	Game in 5 minutes + 3 seconds per move	Yes, No 10
18.14	Game in 5 minutes	Yes, No 1
19	Is there a mode that allows the arbiter to manually input a time control with up to four time periods with an increment?	Yes, No 21
20	Is the incremental time when using Fisher mode added before the first move?	Before
21	Easy to use?	Yes
22	Visible who is on move	Only by seconds counter and lever. Not visible who is White and who is Black (very important when move counter is used)
23	Number of moves	Not visible for the players, the arbiter can easily check

B. Dinu-Ioan Nicula

	Information	Comment
	Name of the clock	DGT 2500
	Name of tester	IA Dinu-Ioan Nicula
	Period of testing	27.12.2022-10.01.2023

Test	Description	Comment
1	Is it possible to read the information on the displays at a distance of 3 metres from the clock?	YES
2	Does the clock have the ability to be included as part of an electronic chess board broadcast? If yes, was this tested	NO
3	Is it clearly visible which player is to move, from all sides of the clock?	YES
4	Is there any sound given by the clock during or at the end of game? If yes, is it possible to	YES It is possible to switch the sound off.
5	Is the clock speed equal with the normal time?	YES
6	Is there a low battery indication or a battery percentage?	YES
7	If the answer to test 6 is yes, is this indication shown immediately after the	YES
8	Is it possible to change or delete indications of	YES
9	Is there a short manual on the clock?	YES
10	Is the clock stable during use, especially when players are short on time?	YES
11	Did you make test 10 under normal tournament conditions with at least five	In play with my family
12	Are the buttons used by the players sturdy enough?	PROBABLY YES
13	Did you make test 12 under normal tournament conditions with at least five players?	In play with my family
14	If both flags fall, can you determine which fell first?	YES
15	Do both clocks stop after a flag fall?	YES, if Freeze function is activated
16	Did you have problems to correct the time shown by the display or to give penalties?	NO It has the possible to give a quick time penalty of 1 minute

17	Did you have problems to change the move counter?	NO
18	Are the following rate of play available as default modes:	

18.1	40 moves in 100 minutes + 20 moves in 50 minutes + 15 minutes and 30 second per move from move 1	YES
18.2	40 moves in 90 minutes + 30 minutes with an	YES
18.3	Game in 90 minutes + 30 seconds per move from move 1	YES
18.4	40 moves in 2 hours + 20 moves in 1 hour + 15	YES
18.5	40 moves in 2 hours + 20 moves in 1 hour + 30	YES
18.6	40 moves in 2 hours + 30 minutes	YES
18.7	Game in 60 minutes	YES
18.8	40 moves in 2 hours + 1 hours	YES
18.9	Game in 15 minutes + 10 seconds per move	YES
18.10	Game in 25 minutes + 10 seconds per move	YES
18.11	Game in 25 minutes	YES
18.12	Game in 3 minutes + 2 seconds per move	YES
18.13	Game in 5 minutes + 3 seconds per move	YES
18.14	Game in 5 minutes	YES
19	Is there a mode that allows the arbiter to manually input a time control with up to 4 time periods with an increment?	YES It is possible for 4 times periods
20	Is the incremental time when using Fisher mode added before the first move?	YES
21	Easy to use?	YES
22	Visible who is on move	YES
23	Number of moves	YES

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	Description	Comment
	Do you have some additional remarks to some questions?	1. The levers are too noisy at pressing, which is a real problem, specially at blitz or in tournaments with many participants. 2.The font of the letters on the back
	What is your recommendation on endorsement?	Positive, but only after solving the observation above.

C. Olexandr Prohorov

	Information	Comments
	Name of the clock	DGT 2500
	Name of tester	IA Olexandr Prohorov (UKR)
	Period of testing	January – 2023

Test	Description	Comment
1	Is it possible to read the information on the displays at a distance of three meters from the clock?	Yes
2	Does the clock have the ability to be included as part of an electronic chess board broadcast? If yes, was this assessed successfully?	No
3	Is it clearly visible which player is tomove, from all sides of the clock?	Yes
4	Is there any sound given by the clock during or at the end of game? If yes, is it possible to switchthe sound off?	Sounds ring 5 seconds before flag falls. Yes. Can be switch on-off.
5	Is the clock speed equal with the normal time?	Yes
6	Is there a low battery indication or abattery percentage?	Low battery only
7	If the answer to test six is yes, is this indication shown immediately after the clock is set up?	No
8	Is it possible to change or delete indications of the clocks by default?	No (-)
9	Is there a short manual on the clock?	Yes

10	Is the clock stable during use, especially when players are short on time?	Yes
11	Did you make test ten under normal tournament conditions with at least five players?	No
12	Are the buttons used by the players sturdy enough?	Yes
13	Did you make test twelve under normal tournament conditions with at least five players?	No
14	If both flags fall, can you determine which fell first?	Yes (freeze mode)
15	Do both clocks stop after a flag fall?	freeze mode
16	Did you have problems to correct the time shown by the display or to give penalties?	No
17	Did you have problems to change the move counter?	No
18	Are the following rate of play available as default modes:	
18.1	40 moves in 100 minutes + 20 moves in 50 minutes + 15 minutes and 30 second per move from move 1	Mode 18
18.2	40 moves in 90 minutes + 30 minutes with an increment of 30 seconds per move from move one	Mode 16
18.3	Game in 90 minutes + 30 seconds per move from move 1	Mode 15
18.4	40 moves in 2 hours + 20 moves in 1 hour + 15 minutes and 30 seconds per move from sixty-one move	Mode 19
18.5	40 moves in 2 hours + 20 moves in 1 hour + 30 minutes	Mode 6
18.6	40 moves in 2 hours + 30 minutes	Mode 4
18.7	Game in 60 minutes	Mode 3
18.8	40 moves in 2 hours + 1 hours	Mode 5
18.9	Game in 15 minutes + 10 seconds per move	Mode 13
18.10	Game in 25 minutes + 10 seconds per move	Mode 14
18.11	Game in 25 minutes	Mode 2

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18.12	Game in 3 minutes + 2 seconds per move	Mode 9
18.13	Game in 5 minutes + 3 seconds per move	Mode 10
18.14	Game in 5 minutes	Mode 1

19	Is there a mode that allows the arbiter to manually input a timecontrol with up to four time periods with an increment?	Mode 21
20	Is the incremental time when usingFisher mode added before the first? move?	Before first move
21	Easy to use?	Yes
22	Visible who is on move	No
23	Number of moves	No

Annexure C - Tie-Break Regulations Changes

PLAY-OFF AND TIE-BREAK REGULATIONS

Approved by <mark>xxxx</mark> on <mark>dd/mm/yyyy</mark>

Applied from 1st September, 2023 for all FIDE competitions under the aegis of EVE and GSC; from 1st April, 2024 for all FIDE-rated competitions.

1. Scope

    These regulations shall apply to all FIDE-rated competitions.

    - *Note: See article 4.1.*

2. Ranking of Tied Participants (Players or Teams)

    2.1 The regulations of the tournament shall specify whether tied participants will share the same place in the standings or, if not, a method for ranking them.

    2.2 The available methods of ranking tied participants are:

    - Over-the-Board play-offs (see Article 3)
    - Off-the-Board tie-breaks (see Article 4 onwards)

3. Play-offs

    3.1 If play-offs are required, the following parameters shall be set out in the specific tournament regulations, as needed:

    3.1.1 Whether play-offs are for all tied positions, or specific tied positions (e.g. 1st place only)

    3.1.2 Whether qualification for play-offs applies after application of none, some or all of the tie-breaks selected in Article 4.1.

    3.1.3 The format (e.g. Round Robin or Knockout)

    3.1.4 The method by which pairing numbers are allocated

    3.1.5 The method by which colours are allocated

    3.1.6 The time limit(s) for all of the games

    3.1.7 The schedule for the games, or the break between each game

4. Tie-Breaks

    4.1 They shall take the form of an ordered list of tie-breaks chosen by the Chief Organiser either among those listed in Article 5, or self-defined in the specific regulations of the tournament.

If necessary, the Chief Arbiter shall complete the list by choosing additional tie-breaks from those listed in Article 5, and publish the list before the start of the tournament.

4.2 For the final tournament standings, participants shall be ranked in the order specified by the respective tie-break, starting from the first specified tie-break and moving to the next in the list whenever a persisting tie cannot be broken. When the tie-break list is exhausted, any remaining tie should be broken by drawing of lots.

4.3 These tie-breaks calculate an evaluation which may be based on:

Type A   a subset of the games by the tied participants.

Tie-Breaks of this type may appear multiple times in the tie-break list.

Type B   participants' own results, so their value can be calculated or predicted by the involved participants before or during their own games

Type C   opponents' (final) results, so they can be calculated only at the end of the round or tournament.

Type D   opponents' prior known data (e.g. ratings, but also results of previous rounds), so their values can be calculated after the pairings are published (i.e. before the games are played)

or some combination of all the above.

4.4 If two participants play each other more than once, each game or match will be treated as a separate encounter (except as provided in Article 6.1.2). Consequently, the data of the opponents (e.g. ratings, scores) will be used in sums and averages as many times as the two participants played each other.

5. Tie-Breaks List and Description

Name (in alphabetical order)	Type	Section	Acronym	Cut-1
Average of Opponents' Buchholz	CC	8.2	AOB	
Average Perfect [Tournament] Performance of Opponents	DC	10.5	APPO	
Average [Tournament] Performance Rating of Opponents	DC	10.4	APRO	
Average Rating of Opponents	D	10.1	ARO	●
Buchholz	C	8.1	BH	●
Direct Encounter	A	6	DE	
Fore Buchholz	D	8.3	FB	●
Games one Elected to Play	B	7.6	GE	
Koya System for Round Robin	BC	9.2	KS	
Number of Games Played with Black	B	7.3	BPG	
Number of Games Won	B	7.2	WON	
Number of Games Won with Black	B	7.4	BWG	
Number of Wins	B	7.1	WIN	

Perfect Tournament Performance	DB	10.3	PTP	
Sonneborn-Berger	BC	9.1	SB	●
(Sum of) Progressive Scores	B	7.5	PS	●
Tournament Performance Rating	DB	10.2	TPR	
Tie-Breaks specific for Team Knock-Outs				
Board Count	B	12.1	BC	
Bottom Board Elimination	B	12.3	BBE	
Top Board Results	B	12.2	TBR	
Tie-Breaks specific for Team Competitions				
Extended Sonneborn-Berger for teams	BC	13.2	ESB	●
Extended Direct Encounter for teams	A	13.3	EDE	
Match Points or Game Points	B	13.1	MPvGP	
Scores and Schedule Strength Combination	BC/BD	13.4	SSSC	

6. Direct Encounter (DE) (Type A, i.e. multi-listable)

   6.1 If some or all the tied participants have met each other, the sum of the scores from these encounters is used to produce separate standings, with the following caveats:

      6.1.1 forfeited games not covered by Article 15.2 are excluded unless the specific regulations of the tournament state otherwise - when included, forfeited games are equivalent to games played

      6.1.2 contrary to the provisions of Article 4.4, if two participants have met more than once, the addend to be used by them in the aforementioned sum is the average score of these games.

   6.2 If all the tied participants have met each other, the separate standings determine all rankings among them, except for any further ties among any subset of them, for which Article 6 shall be reapplied until no further ties can be resolved.

   6.3 In Swiss tournaments, if the tied participants have not played all the games against each other, but one of them is bound to be alone at the top of the separate standings whatever the outcome of the missing games, that participant is ranked first among the tied participants – the same applies to the second rank when the first is assigned this way; and so on.

   Article 6 shall then be reapplied to all remaining unranked participants of this set.

7. Type B Tie-Breaks (based on Participant's own Record)

   7.1 Number of Wins (WIN)

   The number of rounds where a participant obtains, with or without playing, as many points as awarded for a win.

   7.2 Number of Games Won (WON)

The number of games won over the board.

7.3   Number of Games Played with Black (BPG)

The number of games played over the board with the black pieces.

7.4   Number of Games won with Black (BWG)

The number of games won over the board with the black pieces.

7.5   (Sum of) Progressive Scores (PS)

After each round a participant has a certain tournament score. This tie-break is calculated adding the score of the participant at the end of each round.

7.6   Games one Elected to play (GE)

The number of rounds reduced by the number of half-point-byes, zero-point-byes or forfeit losses that a participant had in the tournament.

8.   Buchholz and other Tie-Breaks related to Buchholz

8.1   Buchholz (BH)

The sum of the scores of each of the opponents of a participant.

8.2   Average of Opponents' Buchholz (AOB)

The average of the Buchholz score of the opponents played over the board.

8.3   Fore Buchholz (FB)

Buchholz score calculated as if all paired games for the final round had ended in draws.

See Article 16 for Unplayed Rounds Management.

9.   Tie-Breaks based on both participant's and opponents' results

9.1   Sonneborn-Berger (SB)

It is calculated by adding, for each round, a value given by multiplying the final score of the opponents by the points scored against them. See Article 16 for Unplayed Rounds Management.

9.2   Koya System (for Round Robin) (KS)

The number of points achieved against all participants who have scored at least 50% of the maximum possible tournament score.

10.   Ratings-based Tie-Breaks

These tie-breaks must be dropped from the tournament tie-break list when unrated players are present, unless detailed rules on the handling of unrated players are

included in the tournament regulations or established and published by the Chief Arbiter before the start of the tournament.

10.1 Average Rating of Opponents (ARO)

The average of the ratings of the opponents played over the board, rounded to the nearest whole number (0.5 rounded up).

10.2 Tournament Performance Rating (TPR)

Calculated adding to ARO a number (called rating difference (RD) - which may be negative) resulting from the conversion of the fractional score (number of points achieved in games played over the board divided by the number of games) into RD (see the corresponding conversion table in the FIDE Rating Regulations).

10.3 Perfect Tournament Performance (PTP)

This is a whole number corresponding to the lowest rating that a participant should have for their expected score to be greater than or equal to their tournament score.

The expected score is the sum of the scoring probabilities which are defined in the FIDE Rating Regulations by the conversion table of rating differences into scoring probabilities.

Each rating difference is calculated by using the aforementioned lowest rating and the rating of each opponent faced by the participant during the tournament. The full rating scale is used in this conversion (i.e. no ±400 cut).

10.4 Average [Tournament] Performance Rating of Opponents (APRO)

The average of the performances (TPR) of the opponents played over the board, rounded to the nearest whole number (0.5 rounded up).

10.5 Average Perfect [Tournament] Performance of Opponents (APPO)

The average of the perfect performances (PTP) of the opponents played over the board, rounded to the nearest whole number (0.5 rounded up).

11. Team Tie-Breaks

11.1 In team tournaments each match between two teams may report two types of scores:

11.1.1 Match Points (MP)

Points assigned to a team-win, team-draw, and team-loss.

11.1.2 Game Points (GP)

Sum of the individual points that each player of the team scores.

12. Tie-Breaks Specific for Team Knockouts

Even though these tie-breaks may be used in team competitions (see Article 13), and are described as such, they are specific for team knockouts when both teams have the same number of match points and game points.

Just for these tie-breaks:

- individual forfeit wins or losses are considered as standard wins or losses
- if the team received a pairing-allocated bye, the game points considered for each board are the same as those assigned to a standard win.

12.1 Board Count (BC)

It is calculated by adding for each board a value given by multiplying the number of game points scored on that board (regardless of who was playing on it) by the number of the board (e.g. one for first board, two for second board).

The lower the total, the higher the ranking.

It can only be used when all tied teams have (scored) the same number of game points.

12.2 Top Board Results (TBR)

This is the number of game points achieved on the first board in all games played by the team in the tournament, regardless of who was playing on that board.

If the results on the top board are not decisive, reapply this tie-break to the top-most board not yet counted. Continue reapplying this tie-break in the same way until the tie is broken.

12.3 Bottom Board Elimination (BBE)

This is the number of game points achieved on all boards except for the bottom board in all games played by the team in the tournament, regardless of who was playing on those boards.

If excluding the bottom board is not decisive, reapply this tie-break to the bottom-most board not yet excluded. Continue reapplying this tie-break in the same way until the tie is broken.

13. Tie-Breaks Specific for Team Competitions

All tie-breaks described in Articles 6-10, or some variation of them, may be also applied for teams, using teams MP or GP as the reference score for the team – the primary score being the default, if the reference score is not explicitly indicated.

13.1 MP or GP

Match Points in team competitions that are decided by Game Points or Game Points in team competitions that are decided by Match Points.

13.2 Extended Sonneborn Berger (ESB) for Teams

Combining MP and GP, four combinations of Sonneborn-Berger tiebreaks are available. Any of them or any combinations of them can be used. Each

(Extended) Sonneborn-Berger tie-break is calculated adding for each opponent a value given by the product of two elements:

- the total number of MP or GP achieved by the opponent at the end of the tournament;
- the number of MP or GP scored against that opponent.

The four possibilities are:

13.2.1   EMMSB   Total MP opponent × MP scored

13.2.2   EMGSB   Total MP opponent × GP scored

13.2.3   EGMSB   Total GP opponent × MP scored

13.2.4   EGGSB   Total GP opponent × GP scored

See Article 16 for Unplayed Rounds Management.

13.3   Extended Direct Encounter for Teams (EDE)

13.3.1   Apply the Direct Encounter rule (Article 6), first using the primary score (MP or GP), then, if all the teams are still tied, using the secondary score.

13.3.2   If exactly two teams are still tied in both MP and GP, the rules of a competition must specify whether the Tie-Breaks specific for Team Knockouts apply (Article 12), and, if so, which ones and in what order.

13.3.3   Any time a new subset of tied teams is determined, restart with the new subset from 13.3.1.

13.4   Scores and Schedule Strength Combination (SSSC)

This tie-break adds together two elements:

13.4.1   the secondary score of a team (GP if the primary score is given by MP, or vice versa);

13.4.2   a value that represents the strength of its opposition (called Schedule Strength). This value is the result of a division between:

a)   [dividend] Buchholz of the team, based on the primary score (note: if the tie-break value must be known before playing, use Fore Buchholz);

b)   [divisor] a normalising factor, given by the highest achievable primary score divided by the highest secondary score achievable in a single game, rounded to the nearest integer towards zero, or by a different value if stated by the rules of the competition.

14.   Modifiers

Each tie-break based on a sum of values (that can come from either results, ratings or any value calculated using them) can be redefined by applying a modifier, which is a way to vary the elements that are part of the calculatation, usually excluding some of these elements or, more rarely, adding some:

14.1 Cut-1: Cut the Least Significant Value

14.1.1 It is the most used modifier, applicable in many tie-breaks. The most commonly used are:

a) Buchholz Cut-1 (BH-C1, exclude the opponent with the lowest number of points)
b) ARO Cut-1 (ARO-C1, exclude the opponent with the lowest rating)
c) Progressive Score Cut-1 (PS-C1, exclude the score achieved after the first round)
d) Sonneborn-Berger Cut-1 (SB-C1, exclude the opponent with the lowest score - if more than one, exclude the one with which the worst result was achieved).

14.1.2 In team competition, all the Extended Sonneborn-Berger tie-breaks for teams (see Article 13.2) are calculated excluding one of the opponents with the lowest primary score (MP for EMMSB and EMGSB, or GP for EGMSB and EGGSB) - having the choice the one with which the worst result was achieved.

14.2 Cut-2: Cut the two Least Significant Values

Most commonly used is Buchholz Cut-2 (BH-C2).

14.3 Median1: Cut the Least and the Most Significant Values *(in that order)*

Most commonly used is Buchholz Median-1 (BH-M1).

14.4 Median2: Cut the two Least and the two Most Significant Values *(in that order)*

Most commonly used is Buchholz Median-2 (BH-M2).

14.5 Limit: Change a Limit

The most common modification is in Koya: the limit of 50% of the maximum possible tournament score can be either increased or decreased of half point at a time to let respectively less or more participants contribute to the evaluation of the tie-break.

14.6 All modifiers are subject to Unplayed Rounds Management (see Article 16).

15. Unplayed Rounds

15.1 An unplayed round is any round in which a participant, paired or not, did not play a game in an individual tournament, or a match in a team tournament

15.2 In tournaments with pre-determined pairings, forfeited games (the only possible unplayed rounds) are treated as regular games.

15.3 For Swiss tournaments, apply Article 16.

16. Unplayed Rounds Management in Swiss Tournaments

In Individual or Team Swiss tournaments, the tie-breaks Buchholz (see Article 8.1), Sonneborn-Berger (see Articles 9.1 and 13.2) and their variants (Fore Buchholz, see Article 8.3; and "Cut" Modifiers, see Articles 14.1 to 14.4), which are directly or indirectly based on opponents' results, are affected by the presence of unplayed rounds in the record of participants.

16.1 The following definitions are used in this section:

16.1.1 requested bye: a half-point-bye or a zero-point-bye (note: any round after a participant withdraws is a zero-point-bye)

16.1.2 available-to-play round: any round in which a participant played their game, or ended up without a game due to a pairing-allocated bye, the opponent did not arrive to play, or unforeseen circumstances that resulted in the award of a full-point-bye

16.2 Unplayed rounds can be divided into the following categories:

16.2.1 Pairing-allocated byes or full-point byes

16.2.2 Forfeit wins

16.2.3 Requested byes that are followed by at least one available-to-play round

16.2.4 Forfeit losses

16.2.5 Requested byes that are not followed by any available-to-play rounds

16.3 When a participant has unplayed rounds, for the sole purpose of calculating the tie-break of their opponents, the participant's score is adjusted in the following way:

16.3.1 Unplayed rounds of categories 16.2.1, 16.2.2, 16.2.3 and 16.2.4 are evaluated with the result (win, draw, loss) corresponding to the awarded number of points or, for teams, match points and game points.

16.3.2 Unplayed rounds of category 16.2.5 are evaluated as draws.

16.4 To calculate the participant's own tie-break, any of their unplayed rounds are evaluated as if there was a game played against a dummy that has the same number of points as the participant themself, and ended with the result (win, draw, loss) corresponding to the awarded number of points.

Note: For team competitions, "points" means "match points and game points".

16.5 When a modifier is used that calls for cutting the least significant value (see Articles 14.1 to 14.4), the tie-break score for a participant that has forfeit losses or requested byes among their unplayed rounds is instead calculated by cutting the lowest contribution coming from unplayed rounds of this kind, as long as such contribution is not lower than the least significant value - if it is lower, there is no exception: the least significant value is cut (see Article 14.1).

16.6 The rules of the competition may specify in advance alternative provisions to Articles 16.3, 16.4 or 16.5.

TABLE OF CHANGES

(Note: this table does not include mere changes in the language and only minimal changes in the article numbers)

C.07 – PLAY-OFF AND TIE-BREAK REGULATIONS

LEDGEND	
Text present in the new text	"Removed" in the new part, with grey text in the old part
Text present in only the old text	Articles represented major changes
Text present in both the old and new text with a change in the new text	New article

Article	OLD TEXT	NEW TEXT
Title	TIE-BREAK REGULATIONS	PLAY-OFF AND TIE-BREAK REGULATIONS
Intr.	Approved by FIDE Council on 04/08/2022 Applied from 1st July, 2023	Approved by xxxx on dd/mm/yyyy Applied from 1st September, 2023 for all FIDE competitions under the aegis of EVE and GSC; from 1st April, 2024 for all FIDE-rated competitions.
1.	These regulations will apply to all FIDE competitions under the aegis of EVE and GSC. It is recommended that FIDE-rated competitions also follow these regulations.	These regulations shall apply to all FIDE-rated competitions. • *Note: See article 4.1.*
2.1	The method of ranking tied participants shall be written in the specific regulations of the tournament.	The regulations of the tournament shall specify whether tied participants will share the same place in the standings or, if not, a method for ranking them.
2.2	There are three methods of ranking tied participants: a playoff (see Article 3) or technical tie breaks (see Article 4), or having no tie-breaks.	The available methods of ranking tied participants are: • Over-the-Board play-offs (see Article 3) • Off-the-Board tie-breaks (see Article 4 onwards)
3. *(all)*	Playoff	Play-offs
4.	Other Tie-Breaks	Tie-Breaks
4.4	If two participants played each other more than once, then each game or match will be treated as a separate encounter. Consequently, the data of the opponents (e.g. ratings, scores) are used on as many occasions as the two participants played each other (e.g. in sums and averages).	If two participants play each other more than once, each game or match will be treated as a separate encounter (except as provided in Article 6.1.2). Consequently, the data of the opponents (e.g. ratings, scores) will be used in sums and averages as many times as the two participants played each other.
5.		*Added column Cut-1*

Article 5 table (OLD TEXT):

Average Perfect [Tournament] Performance of Opponents	BD
Average [Tournament] Performance Rating of Opponents	BD
Perfect Tournament Performance	D

Article 5 table (NEW TEXT):

Average Perfect [Tournament] Performance of Opponents	DC
Average [Tournament] Performance Rating of Opponents	DC
Perfect Tournament Performance	DB

	Perfect Tournament Performance	D		Perfect Tournament Performance	DB	
	Scores and Schedule Strength Combination	BD		Scores and Schedule Strength Combination	BC/BD	

6.	(5) Type A: Tie-Breaks Using Tied Participants' Records
	(5.1) Direct Encounter (DE)
	If all the tied participants have met each other, the percentage score from these encounters is used to produce separate standings. The participant with the highest percentage score is ranked first among the tied participants, and the others follow according to the separate standings. Forfeited games are not included unless the specific regulations of the tournament state otherwise.
	In a Swiss system tournament, if the tied participants have not played all the games against each other, but one of them is bound to be at the top of the separate standings whatever the outcome of the missing games, that participant is ranked first among the tied participants - the same applies to the second rank when the first is assigned this way; and so on. Once applied to a set of tied participants, Direct Encounter shall be reapplied to any subset of this set of tied participants until no further ties can be resolved.
		6. Direct Encounter (DE) (Type A, i.e. multi-listable)
		6.1 If some or all the tied participants have met each other, the sum of the scores from these encounters is used to produce separate standings, with the following caveats:
		    6.1.1 forfeited games not covered by Article 15.2 are excluded unless the specific regulations of the tournament state otherwise - when included, forfeited games are equivalent to games played
		    6.1.2 contrary to the provisions of Article 4.4, if two participants have met more than once, the addend to be used by them in the aforementioned sum is the average score of these games.
		6.2 If all the tied participants have met each other, the separate standings determine all rankings among them, except for any further ties among any subset of them, for which Article 6 shall be reapplied until no further ties can be resolved.
		6.3 In Swiss tournaments, if the tied participants have not played all the games against each other, but one of them will be alone at the top of the separate standings whatever the outcome of the missing games, that participant is ranked first among the tied participants – the same applies to the second rank when the first is assigned this way; and so on. Article 6 shall then be reapplied to all remaining unranked participants of this set.

7.	Type B: Tie-Breaks Using Participant's own Record	Type B Tie-Breaks (based on Participant's own Record)
8.	Type C: Tie-Breaks Using Participant's Opponents' Results	Buchholz and other Tie-Breaks related to Buchholz
8.3	(8.4) Buchholz score computed as if all paired games for the upcoming round ended in draws.	Buchholz score calculated as if all paired games for the final round had ended in draws.
	(8) Type D: Tie-Breaks Using Participant's Opponents' Prior Known Data (typically ratings, but also current scores)	*Removed*
9.	Tie-Breaks Using Combinations of Other Data	Tie-Breaks based on both participant's and opponents' results
9.1	It is computed by adding, for each round, a value given by multiplying the current (or final) score of the opponents by the points scored against them.	It is calculated by adding, for each round, a value given by multiplying the final score of the opponents by the points scored against them.
10.	New	Ratings-based Tie-Breaks
10.	(4.5) In order for tie-breaks based on players' ratings to be used, either the tournament specific regulations shall detail how unrated players will be handled, or the Chief Arbiter should inform the players before the	These tie-breaks must be dropped from the tournament tie-break list when unrated players are present, unless detailed rules on the handling of unrated players are included in the tournament regulations or established and published

	start of the tournament.	by the Chief Arbiter before the start of the tournament.
10.1	The average of the ratings of the opponents played over the board.	The average of the ratings of the opponents played over the board, rounded to the nearest whole number (0.5 rounded up).
10.3	This is the lowest rating that a participant should have in order to receive a rating variation of zero after meeting all the opponents faced during the tournament while obtaining the same results. The full rating scale is used in this computation (i.e. no ±400 cut).	This is a whole number corresponding to the lowest rating that a participant should have for their expected score to be greater than or equal to their tournament score. The expected score is the sum of the scoring probabilities which are defined in the FIDE Rating Regulations by the conversion table of rating differences into scoring probabilities. Each rating difference is calculated by using the aforementioned lowest rating and the rating of each opponent faced by the participant during the tournament. The full rating scale is used in this conversion (i.e. no ±400 cut).
10.4	The average of the performances (TPR) of the opponents played over the board.	The average of the performances (TPR) of the opponents played over the board, rounded to the nearest whole number (0.5 rounded up).
10.5	The average of the perfect performances (PTP) of the opponents played over the board.	The average of the perfect performances (PTP) of the opponents played over the board, rounded to the nearest whole number (0.5 rounded up).
12.	Even though these tie-breaks may be used in team competitions (see Article 12), and are described as such, they are specific for team knockouts when both teams have the same number of points.	Even though these tie-breaks may be used in team competitions (see Article 13), and are described as such, they are specific for team knockouts when both teams have the same number of match points and game points.
12.1	It is computed by adding for each board a value given by multiplying the number of game points scored on that board (regardless of who was playing on it) by the number of the board (e.g. one for first board, two for second board). The lower the total, the higher the ranking.	It is calculated by adding for each board a value given by multiplying the number of game points scored on that board (regardless of who was playing on it) by the number of the board (e.g. one for first board, two for second board). The lower the total, the higher the ranking. It can only be used when all tied teams have (scored) the same number of game points.
(in)12.2	the total number of MP or GP currently achieved by the opponent (or at the end of the tournament)	the total number of MP or GP achieved by the opponent at the end of the tournament
13.	All tie-breaks described in Articles 5-9, or some variation of them, may be also applied for teams, using teams MP or GP as the primary score for the team.	All tie-breaks described in Articles 6-10, or some variation of them, may be also applied for teams, using teams MP or GP as the reference score for the team – the primary score being the default, if the reference score is not explicitly indicated.
13.1	MP v GP	Match Points or Game Points (MPvGP)
13.3.1	When only two teams are tied, if they played each other, apply the Direct Encounter rule (Article 5.1). The rules of a competition must specify whether, after that, the Tie-Breaks specific for Team Knockouts apply (Article 11), and if so, they shall list one or more of the tie-breaks.	Apply the Direct Encounter rule (Article 6), first using the primary score (MP or GP), then, if all the teams are still tied, using the secondary score.

13.3.2	When more than two teams are tied, apply the Direct Encounter rule (Article 5.1), first using the primary score (MP or GP), then, if all the teams are still tied, use the secondary score.	If exactly two teams are still tied in both MP and GP, the rules of a competition must specify whether the Tie-Breaks specific for Team Knockouts apply (Article 12), and, if so, which ones and in what order.
14.1.d	New	Sonneborn-Berger Cut-1 (SB-C1, exclude the opponent with the lowest score - if more than one, exclude the one with which the worst result was achieved).
14.3	Median1: Cut the Most and the Least Significant Values	Median1: Cut the Least and the Most Significant Values (in that order)
14.4	Median2: Cut the two Most and the two Least Significant Values	Median2: Cut the two Least and the two Most Significant Values (in that order)
15.	Unplayed Rounds Management	Unplayed Rounds
15.2	(14.2) In Round Robin tournaments, forfeited games (the only possible unplayed rounds) are treated as regular games.	In tournaments with pre-determined pairings, forfeited games (the only possible unplayed rounds) are treated as regular games.
16.	New	Unplayed Rounds Management in Swiss Tournaments
16.	In Individual or Team Swiss tournaments, tie-breaks that directly or indirectly are based on opponents' results (mainly Type C tie-breaks and derivations) can be affected by the following categories of unplayed rounds:	In Individual or Team Swiss tournaments, the tie-breaks Buchholz (see Article 8.1), Sonneborn-Berger (see Articles 9.1 and 13.2) and their variants (Fore Buchholz, see Article 8.3; and "Cut" Modifiers, see Articles 14.1 to 14.4), which are directly or indirectly based on opponents' results, are affected by the presence of unplayed rounds in the record of participants.
16.2		Unplayed rounds can be divided into the following categories:
16.2.1	Pairing-allocated byes, forfeit wins or full-point byes	Pairing-allocated byes or full-point byes
16.2.2		Forfeit wins
16.2.4	(14.3.3) Forfeit losses that are followed by at least one available-to-play round (14.3.5) Forfeit losses that are not followed by any available-to-play rounds	Forfeit losses
16.3	When a participant has unplayed rounds, for the sole purpose of computing the tie-break of their opponents (see Articles 7.1, 9.1, 12.2, and Article 13 in full), the participant's score is adjusted in the following way: (14.4.1) Unplayed rounds of categories 14.3.1, 14.3.2 and 14.3.3 are evaluated with the result (win, draw, loss) corresponding to the awarded number of points or, for teams, match points and game points. (14.4.2) Unplayed rounds of categories 14.3.4 and 14.3.5 are evaluated as draws.	When a participant has unplayed rounds, for the sole purpose of calculating the tie-break of their opponents, the participant's score is adjusted in the following way: 16.3.1 Unplayed rounds of categories 16.2.1, 16.2.2, 16.2.3 and 16.2.4 are evaluated with the result (win, draw, loss) corresponding to the awarded number of points or, for teams, match points and game points. 16.3.2 Unplayed rounds of category 16.2.5 are evaluated as draws.
16.4	To compute the participant's own tie-break, any of their unplayed rounds are evaluated as if there was a game played against themself, and ended with the result (win, draw, loss) corresponding to the awarded number of points or, for teams, match points and game points.	To calculate the participant's own tie-break, any of their unplayed rounds are evaluated as if there was a game played against a dummy that has the same number of points as the participant themself, and ended with the result (win, draw, loss) corresponding to the awarded number of points.

		Note: For team competitions, "points" means "match points and game points".
16.5	When a tie-break is modified with low cuts (i.e. cuts that eliminate the least significant values) and there are participants with unplayed rounds of categories from 14.3.2 to 14.3.5 inclusive, these unplayed rounds are the first games to be cut. If there are more unplayed rounds of this kind than required low cuts, the tie-break values coming from those unplayed rounds that contribute in the least significant way to the tie-break shall be cut first.	When a modifier is used that calls for cutting the least significant value (see Articles 14.1 to 14.4), the tie-break score for a participant that has forfeit losses or requested byes among their unplayed rounds is instead calculated by cutting the lowest contribution coming from unplayed rounds of this kind, as long as such contribution is not lower than the least significant value - if it is lower, there is no exception: the least significant value is cut (see Article 14.1).
16.6	The rules of the competition may specify in advance an alternative solution to Articles 14.4, 14.5 and 14.6.	The rules of the competition may specify in advance alternative provisions to Articles 16.3, 16.4 or 16.5.

Technical Commission Proposal

to the FIDE Management Board

June 13th, 2023

Author: Technical Commission

Document type	Proposal
Subject of Document	Changing the Tie-Break Regulations
Document version	2.0
Date	June 13th, 2023

Scope of the document

The present document is a proposal to the FIDE Management Board as follows:

Change the present regulations regarding *C07. Tie-Break Regulations / Tie-Break Regulations effective from 1 July 2023 /* to new regulations effective from 2024.

1. Background

In November 2022, the Technical Commission incorporated the SPP Commission and its activities. A transition period followed in which we established solid internal organization principles, standards and procedures and we organized the commission into departments and workgroups.

The activities which were conducted previously by the SPP Commission are now conducted by the SPP Department, a structure inside the Technical Commission supervised by the Chairman and Secretary. The head of department, Roberto Ricca, along with the members of the department carefully studied the *C.07 Tie-Break Regulations effective from 1 July 2023* and concluded that there are several issues that must be resolved. The issues were further discussed with vendors and other experts in SPP and then extensively analyzed with the entire TEC commission under the supervision of FIDE Executive Director Victor Bologan.

2. Issues to be Resolved

The new version of C07 looks particularly good. However, when we started to delve into these rules and the implementation thereof (software developers), significant weaknesses in the various definitions were identified.

Some of them can be considered minor and easily solvable, such as, for example, inaccurate word choice. Others, however, are more complicated to deal with, especially when a definition was incomplete (typical situation: "if something happens, do this," but to speak in programming language, the "else" clause is missing - so what should be done if "that something" doesn't happen?), some logical situations have been ignored (for example, in regulations related to team competitions), or the wording is so intricate that

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even those who produce it don't have a clear picture of the exact meaning.

There are important concerns that the new rules may create unfair situations. Such a situation is presented as follows. Although the choices are statistically sound (at least according to the analysis done in 2014), we want to address our concerns that following the current regulations, risks are that a player (or team) wins a tournament just because they got lucky with a forfeit win in the early rounds.

Further, several concrete issues are briefly mentioned:

- Some rules are incomplete, others are unclear. In all these cases, interpretations are required.
- The handling of unplayed games - the great novelty of these new rules- needs to be better defined because it contains some provisions that are blatantly wrong.
- Forfeits before withdrawal - the rule was found to be wrong and must be changed.
- Cuts and voluntary unplayed rounds are fine for Buchholz, but not for Sonneborn-Berger (i.e., Olympiad)
- There is no manual explaining how these rules should behave in certain situations and the programmers do not know how to implement the new rules.
- Furthermore, the new C.07 states that these rules, apart from GSC and EVE tournaments, are only recommendations. Therefore, it is very probable they will not be used outside GSC and EVE events.

3. Recommendation

We consider *C07. Tie-Break Regulations / Tie-Break Regulations effective from 1 July 2023* a good approach to improve the new tie-break regulations to create the best climate for pairing players/teams. However, the devil lies in detail, and we consider that the current format of the C07 regulations has a significant risk of unfair situations. Moreover, we consider that the lack of details for the main changes will lead to mistakes in both software developers' and arbiters' activities in connection with SPP.

Our proposal is to allocate one extra month to the Technical Commission to elaborate extensive and improved C07 Regulations.

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Since there is already a FIDE Council decision regarding the C07 Regulations to take into force on July 1st, 2023, we propose the following:

1. Change the effective date from 1 July 2023 to 1 September 2023
   Notes:
   The Technical Commission shall submit the text of the new tie-break rules to the FIDE Management Board by no later than 31 July 2023. This will give the FIDE Management Board time to consider the new text and publish it on the FIDE website by 15 August 2023 to be effective on 1 September 2023.

2. Software vendors must implement the new tie-break rules by 1 March 2024
   Notes:
   This implies that pairing software will not calculate tie-breaks correctly until it is mandatory to be implemented by 1 March 2024 and the arbiter must calculate these tie-breaks by hand (manually) until the software implemented the new rules. It could create a discrepancy between the tie-breaks published by the software and the official tie-breaks calculated by the arbiter.

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Millenium eBoards

Evaluation Report

Author: Technical Commission

Subcommittee: Tiberiu Georgescu (Chairperson), Hendrik du Toit (Secretary), Agnieszka Brustman, Tania Karali, Shaul Weinstein (invited expert), Olexandr Prohorov, Rohan Waithe, Russell Smith, Arasu B, Mehrdad Pahlevanzadeh

Document type	Report
Subject of Report	Millennium 2000 Digital GmbH - M850 EBoard
Document version	1.1
Date	December 19th 2022

Contents

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Scope of the report

This report represent a detailed analysis on how Hybrid eBoards by Millenium 2000 GmbH can be used on hybrid events. During this report we will refer to the product as *the eBoard.*

The analysis is performed considering the *FIDE EBOARD CHESS REGULATIONS,* published on November 8th 2022 and the FIDE Rules for official tournaments.

Our report is built considering the following assumptions:

a. The eBoard is used in hybrid events by both players
b. Both players are playing under arbiter supervision
c. The players are not allowed to switch to using the computers (an exception can be made in time trouble)

Product description of Millenium eBoard

Manufacturer	Millennium 2000 Digital GmbH
Model	M850
Firmware version	Supreme Tournament 55
Firmware release date	Registered in Munich - HRB 219617
Model release date	2021

Background

FIDE announced the commissions for the period 2022 to 2026 on 15 November 2022. The new Technical Commission was shortly after the appointment tasked with the completion of the evaluation of the Hybrid eBoards by Millenium. The previous Technical Commission already started with the evaluation and a few members of the new Technical Commission completed the physical evaluation of the boards.

The commission was tasked to complete the evaluation as a matter of urgency. Two meetings were concluded on 29 November 2022 and 6 December 2022 of which this report is a result.

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Description of the board usage (purpose)

eBoards look like normal chess boards, but they contain electronics that identify which chess pieces are on which squares of the board, and this information can be transmitted via the Internet to an opponent who is also using an eBoard or who is playing on a virtual chessboard – on a device with a screen such as a laptop or a smartphone.

The purpose of using an eBoard is to have a completely screen-free playing experience - to enable a user to play chess with a real chess board and real pieces but *without* looking at a computer screen or using a computer keyboard. This enables an eBoard player to conduct their games in a completely intuitive and user-friendly way.

When we refer to "user-friendly" in this context we do not mean friendly for a computer-user, we mean friendly for a chess player. The same applies to "intuitive" – the process should be intuitive for a chess player who might not be an experienced computer user. So regular chess players will find the whole of the playing process intuitive - they should not have to consult a computer screen during a game, or to use a computer keyboard.

The Regulations don't cover all possible situations that may arise during a competition, but it should be possible for an arbiter with the necessary competence, sound judgement, and objectivity, to arrive at the correct decision based on his/her understanding of these Regulations.

1.   (ECU, 2022)

● Compatible mobile devices: Android devices from Android 6.0 with Bluetooth BLE; iOS devices; Tornelo via Windows PC
● Supported servers: lichess.org, chess.com & tornelo.com

The Chess Board Physical Parameters	Comment
Chess Board Dimensions and Material	55x55x2 cm wood
Chess Board Weight (brutto, netto)	4,2 kg
Chess pieces (FIDE rules, Staunton style, size, proportions in relation to the squares board)	Handmade wooden pieces Felt, American Staunton style weights 3.75, proportion ok, king size 9,5cm, 2 queens additionally included

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Physical stability, appearance and packaging of the chess pieces, together with appropriate photographs.	very stable, nice appearance, piece storage in premium packaging Each figure has its own compartment
Details of power supply options, the electrical/electronic characteristics of any necessary cables, and the characteristics of any batteries specified for use with the system.	power supply adaptor input 100-240V 50/60Hz, output 9V-1A. fully charged ChessVolt delivers Power for up to 10 hours continuous use. In case your ChessVolt runs out of power, plug in ChessVolt via mains adaptor to the power supply.
If the eBoard supports wireless connection, the characteristics of the wireless module and wireless connection method.	Bluetooth-with smart phone ChessLink App and Lichess app cable DIN connect Chesslink and board

Electronic chess clock and moves	Comment
Details of the connectivity, compatibility and power supply relating to the use of electronic chess clocks.	The board has no direct connection to electronic chess clocks. We can see the clock on the smartphone screen when we connect by phone or PC in the tornelo program.
Details of the reaction times for moves made on the eBoard, and for the transmission of move data.	In my practice, I needed 2 seconds. to see the move made by the opponent and 2 sec. to broadcast my own move. Sliding speed of the figures (recommendation is level 5 = the slowest level, safe for people sliding the pieces over the board)

Practical Experience of usage

a. Friendly events (home or the club)

The board was used to play friendly games on the lichess.com platform. It connects to a phone using bluetooth interface and then ChessLink app connects to lichess.com using a login token that lichess provides. The application does not allow games that are slower

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than 5 minutes per game + 5 seconds per move. This is the minimal time that is enough to reproduce your opponent's moves on the board and then make your own move. The game can be played without looking at the phone, as the board shows the opponent's moves using flashing lights. However, only the phone shows the time left on the clocks. Additionally, only using the phone can you offer a draw or see when a draw was offered. A player must be aware that when moving a piece it is not recommended to make the move slowly - the board can recognize that the piece has arrived at a square in the middle of move's route and send an incorrect move to lichess. Once this happens, there is no way to correct the move. The board handles illegal moves well - it shows what needs to be fixed by highlighting the squares involved, and does not allow any move till the mistake is fixed. The board does not recognize an event of touching a piece.

Example of usage:

https://youtu.be/-rYOHNAIwio

b. Official events

On February 5th, an exhibition team match was organised between members of the ECU Board and players from the Berlin Chess Association.

Every player had in front of them a Millenium board, a laptop and a ChessLink module. The module is a small device that serves to connect the board and the player's laptop via a USB cable and needs to be connected to a power source at all times. The set up is individual for each player, meaning that the boards are not connected to each other or the arbiter's computer, as in OTB events.

The simplicity of this way of playing is that the players only need to use the physical board for playing and not a virtual one, whereas in a "classic" hybrid match they would need to move on the virtual board first and then copy the moves to the physical one. Thus, they avoid confusion and can focus on their game on the physical board only. Of course, the computer is still needed as it provides the clocks and the controls to start the game, offer a draw or resign.

A disadvantage that we noticed during the match is that each player needs a sufficient amount of time to copy the opponent's move, before they can make their own (making a move before transferring the opponent's move is considered illegal by the board). An increment of at least 30 seconds after each move is recommended for that purpose.

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Overall, it was an interesting experience for both teams.

Comments

- According to the hybrid events regulation the purpose of using an eBoard in is to have a completely screen-free playing experience - to enable a user to play chess with a real chess board and real pieces but *without* looking at a computer screen or using a computer keyboard. However, this eBoard doesn't solve this issue for several reasons:
  o Time can be observed only on the computer screen
  o Draw offers can be observed only on the computer screen
  o Draw offers can be made only on the computer screen
- The e-board does not take the role of the arbiter. The arbiter is irreplaceable.
- Touch – Move rule cannot be applied
- All players in the tournament must be using the boards to make the conditions equal and same for everyone. Under time pressure, they should be allowed to move to the computer screen. Time pressure needs to be defined.
- It is not suited for quicker time controls i.e. blitz is not recommended.
- We strongly advise to not start using them in top level tournaments. First some pilot events on a national level.
- The players must get familiar with the hardware, but the players do not have access to the hardware and could be problematic.
- Ten (10) second increments is not enough to copy the opponent's move. It was not always clear what the opponent's move was. We recommend time controls with a minimum 30 second increments.
- We recommend using cameras in the playing hall.
- For online events where there is no supervision by local arbiters, it is mandatory that both should be visible on camera.

Recommendation

We divided our recommendations into three categories: *urgent*, *as soon as possible* and *nice-*

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to-have.

Urgent i.e. before any endorsement or recommendation

1. Improving the move transmission system

    a. When a player receives the opponent move by blinking on the E-Board, the blinking should continue till the piece is moved and position is exactly correct.

    b. Some of the testers confirmed that this issue was resolved, however others claimed that it wasn't and lights turned off after some time.

2. Improving the Board precision on long moves

    a. When making long moves, sometimes the board may catch a wrong move (e.g. when playing Bishop from c1 to g5, a board may register move Bf4, as can be observer in video: https://youtu.be/-rYOHNAIwio)

As soon as possible

1. When a player make a move, the starting square should start blinking, then destination square should start blinking until player keep the piece there for more than 3 seconds (this blinking can be faster or slower)(also blinking can be gradually getting faster till remain on); the LEDs will be off when the opponent transfer the move correctly on his board. It's recommend to make a system that pieces can record the start and end of the touch for future.

2. Add an option to indicate a draw or resignation controlled from the board and not the computer, possibly a digital display on the board. Player should be able to see the remaining time of himself and opponent on a digital screen as a part of the board.

3. It's recommended to make a system for offering draw to the opponent : For example by adding a button on the board that sends an offer draw to the opponent or by moving up and down 3 times the moved piece on the destination square (for about 2 centimetres). The opponent can see the offer draw by blinking 4 LEDs in the 4 corners of the board at the same time.

4. A clock should be connected to the board in some way. Referring to the computer screen takes time and defeats the purpose.

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"Nice-to-Have"

1. Correct the moves from the computer in case of an incorrect move registration.
2. To avoid human error while making opponents move, automatic movement of pieces will save time and avoid distraction. (e.g. Squarreoff)
3. Display screen to show the moves and the time for the players
4. Option to limit connectivity to the device,
   a. With the current technology we can have more than 1 connection to bluetooth. It should be limited to only one connection
   b. Connectivity logs, as a report, which will give connection status and any disconnection observed during the game and so on?

Conclusion

Our general feedback about the analysed product is good. The experience (in terms of touch and feel) using the eBoard is excellent and it is definitely an important effort towards developing chess. However, we encountered several issues, detailed in this report and briefly mentioned below. In order to be used in all hybrid official event, we do believe that the following matters should be addressed and fixed.

- According to the hybrid events regulation the purpose of using an eBoard is to have a completely screen-free playing experience - to enable a user to play chess with a real chess board and real pieces but *without* looking at a computer screen or using a computer keyboard. However, this eBoard doesn't solve this issue for several reasons:
   o Time can be observed only on the computer screen
   o Draw offers can be observed only on the computer screen
   o Draw offers can be made only on the computer screen

- There is a 2-3 seconds delay from the moment the move is made to the moment it is shown by the EBoard. Testers considered 7-10 seconds needed for making the opponents move on the board. Considering this, we understand the followings:
   o Extra delay time need to be added for making the opponents' move on the board

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- o Blitz chess is not practical using eBoard and rapid chess can also present certain risks.
- The EBoard may catch wrong moves especially for long moves.
  - o The online platform used needs to offer the possibility to the arbiter to take back one or two moves and reset the clock.

Meanwhile, until the issues indicated are resolved, we consider that EBoard can be used in hybrid events, but under certain conditions:

- Classical events with at least 30 seconds increment – we recommend 40 seconds increment
- Rapid events with at least 15 seconds increment
- Tournaments with player rated under 2300; we advise to not use them in strong tournaments (with players rated 2300+)
- Well prepared arbiters with special technical training are present
- The online platform used needs to offer the possibility to the arbiter to take back one or more moves and reconfigure the clock.

However, we recommend the board to be used in strong hybrid tournaments only if the players are allowed to perform their moves on their board AND on the computer anytime, according to their preferences.

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References

Report tests, Brustman Agnieszka IA & IO Almog Burstein (with the assistance of FA
Shaul Weinstein), 2022
ECU Report, 2022
FIDE proposed regulations for hybrid events, 2022
FIDE Rules Commission Report, 2022

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Appendixes

Annex 1. Testing Report – Hybrid E-Boards

	Information	Comment	Comment
1a	Manufacturer's representative	Maximilian Hegener, Thomas Karkosch	Thomas Karkosch
1b	Name of the hybryd e-board	Supreme Tournament 55	Millennium
2	Name of tester	Brustman Agnieszka	IA & IO Almog Burstein (with the assistance of FA Shaul Weinstein)
3	Period of testing	July 2022	30/6/2022 – 20/7/2022

	Product Release Note	Comment	Comment
4	Manufacturer	Millennium 2000 Digital GmbH	Millenium
5	Model	M850	M825
6	Firmware version	Supreme Tournament 55	
7	Firmware release date	Registered in Munich - HRB 219617	
8	Model release date	2021	
	Manufacturer's contact details		
9	Postal address	Heisenbergbogen 1 D-85609 Aschheim (Dornach)	
10	Email address	thomas.karkosch@millennium2000.de support@millennium2000.de	thomas.karkosch@millennium2000.de
11	Telephone number	0800 – 64 55 366	

Test	The Chess Board Physical Parameters	Comment	Comment
12	Chess Board Dimensions and Material	55x55x2 cm wood	54.5 x 54.5 cm
13	Chess Board Weight (brutto, netto)	4.2 kg	3.3 Kg without the pieces 4 Kg with the pieces
14	Chess pieces (FIDE rules, Staunton style, size, proportions in relation to the squares board)	Handmade wooden pieces	Very similar to Staunton style, size proportional to the board, professional and natural look and feel.

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		Felt, American Staunton style weights 3.75, proportion ok, king size 9,5cm, 2 queens additionally included	
15	Physical stability, appearance and packaging of the chess pieces, together with appropriate photographs.	very stable, nice appearance, piece storage in premium packaging Each figure has its own compartment	Professional packaging, easy top open, a bit long way to pack back as each piece has its own a slot. Pretty sizable package size but - considering the electronical parts that need to be stored – convenient and well organized.
16	Details of power supply options, the electrical/electronic characteristics of any necessary cables, and the characteristics of any batteries specified for use with the system.	power supply adaptor input 100-240V 50/60Hz, output 9V-1A. fully charged ChessVolt delivers Power for up to 10 hours continuous use. In case your ChessVolt runs out of power, plug in ChessVolt via mains adaptor to the power supply.	Wired connection to the computer is done using USB. Standard USB Cable was not supplied in the set. Probably should be.
17	If the eBoard supports wireless connection, the characteristics of the wireless module and wireless connection method.	Bluetooth-with smart phone ChessLink App and Lichess app cable DIN connect Chesslink and board	Wireless connection is through Bluetooth. Only one board can be connected to a mobile app. No connection to a computer using Bluetooth is available.

Test	Electronic chess clock and moves	Comment	Comment
18	Details of the connectivity, compatibility and power supply relating to the use of electronic chess clocks.	The board has no direct connection to electronic chess clocks. We can see the clock on the smartphone screen when we connect by phone or PC in the tornelo program.	The package does not supply chess clocks at all.
19	Details of the reaction times for moves made on the eBoard, and for the transmission of move data.	In my practice, I needed 2 seconds. to see the move made by the opponent and 2 sec. to broadcast my own move. Sliding speed of the figures (recommendation is level 5 = the slowest level, safe for people sliding the pieces over the board)	Moves are transmitted smoothly, in fact – move transmission delay needs to be set to the highest possible parameter as the board is sensitive and catches the move quickly. Sometimes, when making a "long" move – if the piece touches a square in the middle, incorrect move is transmitted – for example Kf1 instead of 0-0.

Test	Physical or electronic restrictions	Comment	Comment
20	Details of any physical or electronic restrictions required to prevent the equipment causing audible	Board need stable internet connection	No such restrictions were seen. The electronic parts connected to the board do

	disturbances for players, and to prevent any external factors causing adverse effects on the stable operation of the equipment.	the system of showing the opponent's moves (flashing LEDs) turns off after about 2-4 sec. I used the hotel wifi and tornelo platform. Operate in the dry, indoor place.	not disturb the players and can be stored in any available compartment near the board. Boards can be used autonomically with power banks supplied or connected to electric source.

Test	Important practical matters	Comment	Comment
21	Specifications for the extent to which the eBoard recognizes the chess pieces on each square and the moves of the pieces.	Ultra-fast RFID piece recognition, 81 LEDs (4 per chessboard), dimmable, Led move detection system "tc_settings":can change brightness of the board LEDs The LEDs can be conveniently dimmed and switched on/off via the logo badge. it takes about 2 seconds to see the correct move of the opponent piece when we have many figure on the board, easy to make a mistakes. Castle- instead of castling it is easy to mistakenly put the king on f1 and cannot correct anymore. Producer advice change Sliding speed of the figures (recommendation is level 5 = the slowest level, safe for people sliding the pieces over the board)	Pieces are recognized smoothly when on squares. Piece starts to be recognized even when it is positioned about 1cm above the square. Piece moving from one square to adjacent one first disappear from the old square and then appear on the new one. No fantom pieces appeared
22	Any additional specifications relating to the connecting cables and any adaptor required, over and above those stated in sections 16, 17 and 18 above.	USB Kabel (Typ USB A – USB B, printer standard) with board and notebook	Control box is connected to the board and supplies power to the board. The control box can be powered by a power bank or by direct Electricity connection. It connects to the computer using USB printer cable,

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23	Specifications of all functionality of the system that relies on data memory in the eBoard and/or any other element of the system.	the memory of the games is provided by applications tornelo, chess.com, lichess. the board has no screen display	EBoards do not have memory. All the operations are done through the control box.
		You can connect MILLENNIUM boards to the popular online platforms lichess.org and chess.com. For tournaments you can use the professional platform tornelo.com.	
24	Specifications of the requirements for the communication and transmission of moves and other game relevant data, both within the system and between the system and the Internet.	Yes The Guideline how to set up Hybrid or OTB Tournaments with our boards, using Tornelo	The board transmits the moves to the connected device (Computer by USB, App by Bluetooth). When a move is received, the board uses LEDs to show what piece should move to what square. The player must move his opponent's piece accordingly.
25	Specifications as to the computer hardware, operating systems and any other software provided by the event organizers for use with the eBoard system.	Laptop(s) with a 64-bit Windows 10 or 11 Tornelo Connector Sterownik ChessLink dla interfejsu USB: Sterowniki VCP – FTDI (ftdichip.com)	Hardware: Control box, power supply, cables (missing printer USB cable in eth package). SW: - ChessLink app (exists both for iOS and Android) - Drivers for Operating system (I tested only Windows)
26	Specification of the method(s) by which relevant tournament data can be input from a tournament configuration file and/or by manual input.	Via chess platform Android devices from Android 6.0 with Bluetooth BLE; iOS devices; Tornelo via Windows PC	Tournament managing is not done by this system. It connects to Tornelo or Lichess and relies on these systems to manage the parings and to export PGNs.
27	Specification of the methods, if any, for the creation of PGN files, including the relevant clock time data.	Via Tornelo platform , online games generate a Live PGN file,	PGNs are created in Lichess and Tornelo. Clock data is not collected by the board. In fact, it is sometimes hard to follow – during the game a player needs to look at the computer/phone to understand how much time is left.
28	Specification of the methods, if any, for the editing and recording of game data, and details of the data that can be recorded and edited.	Via Tornelo Download the PGN file and use it however you like	Tornelo platform can be used to correct moves using Arbiter's module. When playing on Lichess, data correction is not possible.
29	Specification of the methods, if any, for displaying relevant data for each game, including the players'	Each player must connect the board	Fully relying on Tornelo and Lichess, no autonomous modules for displaying player

	names and clock times, and details of the data that can be displayed.	and log in on Tornelo with their user data. Tornelo or Lichess or chess,com will display names and clock times.	names, tournament information or clock data exists.
30	Specifications of the methods, if any, for monitoring the stability of operation of the system, and any diagnostic support available for assisting in identifying and locating faults in the system.	The correct installation of the driver can be checked in the device manager of Windows after connecting the eBoard.	No monitoring stability tools were supplied
31	Specifications of the methods, if any, that allow an arbiter to set and adjust clock stings remotely, both before and during a game.	The Tornelo arbiter can actively intervene and make time corrections. Incorrect registration of moves The retraction is indicated by the relevant LEDs.	The system does not deal with the clocks at all.
32	Installation documentation sufficient to allow an event organizing team to be able to set up and test the necessary eBoards, cabling, etc.	Yes. PDF showing the Workflows for organizers	Detailed and easy to use installation documents and presentations supplied in German, English, Spanish, Dutch, Russian and French languages. It took us only about 5 minutes from the time the box was opened till the system was ready and the first game on Lichess started.
33	Operation documentation sufficient to enable an event organizing team and arbiter(s) to be able to run their event smoothly.	The Guideline how to set up Hybrid or OTB Tournaments with our boards, using Tornelo	Relying on Tornelo platform to organize tournaments
34	System description documentation sufficient for an event organizing team and arbiter(s) to understand the role of each part of the system.	Yes. Description PDF showing the Workflows for organizers Support contact by email, telephone or via contact form.	As long as a user with Tornelo Arbiter role is part of the organizing team.
	Description	Comment	Comment
	Do you have some additional remarks to some questions?	it is not possible to play at a short time control such as 3min + 2 sec. minimum time control is 5min+5sek. the Mac computer not operated on Tornelo very comfortable for internet transmission not need many cable.	- The scenario of broadcasting OTB tournaments is not completely solved. USB cable length restricted to 5 meters, so connecting over 5-6 boards to one central computer is not possible. - Chess clocks module is not implemented at all.

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| | | | - The board has professional look and feel, packaging is great, pieces recognition is stable, the whole system is stable during several hours of play. Power banks are strong enough to last through 10-12 hours of playing day.
- ChessLink app that is used to connect the board to Lichess sometimes becomes nonresponsive. (tested with iOS, iPhone 11) |
| | What is your recommendation on endorsement? | YES I recommend for long time games . | - The board suits well for Hybrid events and can be recommended for players who want to use regular chess board and not play on a computer.
- The board cannot be used for broadcasting large OTB tournaments, as there are connection limitations and clock module is missing. |

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Annex 2. Correspondence with the product representative regarding main issues

A. Very important

[TEC:] *1. When a player receives the opponent's move by the blinking on the eBoard, does the blink continue until the move is made and the position is exactly closed or does it stop after several seconds? Some of the testers confirmed that this issue was resolved, however others claimed that it wasn't and lights turned off after some time.*

[Millennium:] *We fully agree that LEDs should remain blinking until the move is done - this is the case already now. LEDs go off when the position is synchronized, but not before.*
The reported problem at one of the TEC testers could not be reproduced. This will most likely have been due to a lack of Wifi connection in the hotel room of this TEC tester, which led to connection problems between Tornelo and PC and thus also between PC and e-board.

[TEC:] *2. When making long moves, sometimes the board may catch a wrong move (e.g. when playing Bishop from c1 to g5, a board may register move Bf4, as can be observer in video: https://youtu.be/-rYOHNAIwio).*
Can the Board precision be improved for the long moves?

[Millennium:] *It has nothing to do with precision, it is the delay which the user can set.*

Each Square detects if a piece is on it or not, in a speed of 25x per second. In our firmware you can set a delay at the destination square (from 100 up to 500 ms), until then the board waits to transmit the move as "final" to the server. If the delay is too short OR the user takes much longer then he normally takes, the piece will be registered. The delay however can be set easily by the user.

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B. Important

[TEC:] *1. Can there be added an extra clock to show the time of both players?*
According to the Hybrid Chess Regulations, The purpose of using an eBoard is to have a completely screen-free playing experience - to enable a user to play chess with a real chess board and real pieces but without looking at a computer screen or using a computer keyboard.
However, without a chess clock it is impossible to avoid looking at the computer.

[Millennium:] *Right, for checking the clock, it's necessary to have a look at the computer screen, but not for player itself. Since each player needs to have a computer anyway to use hybrid programs such as Tornelo (with or without using an e-board), the clock is easily visible there (and there's therefore no need to use an additional clock).*

[TEC:] *2. Can there be added a system to show the draw offer and to offer a draw?*
[Millennium:] *Also this is easily visible directly at the PC screen when you use a platform like Tornelo. Besides draw offer/accept there are further possibilities available to interact, such as „Arbiter call".*

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idChess

Evaluation Report

Author: Technical Commission

Subcommittee: IA Hendrik du Toit (Secretary)**,** IA ArasuB, NA Fungirayiini Mushaninga

Document type	Report
Subject of Report	idChess
Document version	2.0
Date	17 February 2023

Contents

Scope of the Report

This report represents a detailed testing on the usage of idChess software application by Friflex. The analysis is performed considering the relevant articles of Section C of the [FIDE Handbook](). Our report is relies on the following assumptions:

1. Not all test devices are the same brand and/or model, but within the specifications.
2. Not all boards in the tournament are covered.
3. The necessary sections in the FIDE Handbook are changed/adapted.
4. Standard chess equipment usage according to the [FIDE Handbook]().

Product description:

Developers	FriFlex
Software Version ● Admin ● Device	 Unknown. Not visible in the documentation or web app 2.12.2

Background

On 28 November 2022 Friflex requested FIDE to test the idChess Software and "allow it to be used at official FIDE tournaments". A demonstration was given to the Technical Committee Chairman, Dr Tiberiu Georgescu, on 7 December 2022.

After internal discussions within the Technical Committee and consultation with FIDE, three a sub committee with three testers were appointed:

- IA Hendrik du Toit (Lead)
- IA Arasu B.
- NA Fungirayiini Mushaninga

All three testes have experience in software development and are well versed in the game of chess itself.

Description of the Software

idChess is an innovative AI solution for digitising and broadcasting chess games that are played offline. The tournament version of idChess allows you to broadcast games live on the internet or display them on screens, and save them in PGN format after the game.

The tournament version consists of a web admin panel and phones connected to it with the idChess mobile application (Android, iOS). The computer vision technologies in the application, chess games are recognized through a camera in a smartphone. The device is fixed in a tripod, and the camera automatically recognizes the chessboard, then each move of a player is displayed on the screen. After that, games are saved and become available in the idChess application.

The web version of the idChess admin panel allows you to manage tournament broadcasts:

1. Import information about rounds and tournaments from chess-results.com.
2. Create and manage tournament broadcasts.
3. Manage connected smartphones.
4. Edit games while broadcasting.
5. Save and download games in PGN format.

Practical Experience of Usage

Test Conditions

IA Hendrik du Toit

- Phone: Huawei P30 Model VOG-L29
- Software Information: Android Version 10
- Black and White roll-up chess board
- All tests were done indoors

NA Fungirayiini Mushaninga

- Phone: Samsung Galaxy S22 (Model Name SM-S901E/DS)
- Software Information: Android Version 13
- Used Supported Selfie Stick as a tripod stand to hold the phone
- Black and White coloured club style roll-up chessboard
- All tests were done indoors

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IA Arasu B.

- Tried with 5 different phone models:
    - Samsung M33 5G , Samsung F23 - **worked fine**
    - Motorola one action - **Took time to identify the board**
    - Redmi 11 Pro 5G, Moto G71 5G - **not working**
- Software Information: Android Version 13
- Used tripod
- Use Green & white Tournament standard chess Board
- All Test in room light condition

Comments

1. The phone heated up during the first few moves (Galaxy S22: Android version 13), might affect the phone after a long game.
2. The following phones appeared not to recognise the board:
    a. Moto G71 5g with Android 12
    b. Redmi 11 Pro 5G
    c. "Moto oneAction" with Latest Android 11 - Not stable in identification.
3. The suggested changes to the General Rules, "Regulations and Technical Recommendations for Tournaments" should be referred to the Rules Commission and possibly the Arbiters Commission as well.
4. It does not seem there is anything specific in the "FIDE Laws of Chess" to prevent the usage of such a device and software. However, it is advisable to add an article to specifically authorise it.
5. The registration process is unclear.   Not able to access the admin panel. Subscription for the organiser model is not clear, currently i have login with one id and used in 5 devices.
6. It seems that access to the tournament Organiser/Arbiter (live arbiter) is only given only on request? It should be more clear and well defined to gain access by the organiser and host of the tournament on the idChess platform.
7. Who owns the data?   In case of a tournament is the data (games/notation) owned by the organiser or idChess.

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General Recommendations

1. idChess App must recognize the end game result without waiting for the Admin to physically enter the results. Automatic recording of results will be great support for the Rapid and blitz type of tournament.

2. It would be more convenient if idChess could add an engine function or a link that takes spectators to chess engines for analysing purposes. According to the vendor, it will already be available in the next release.

3. Recording of video might be helpful in case of any irregularities (touch piece). According to the vendor, it will already be available in the next release.

4. Moves in memory while irregularities (touch piece) or illegal will be helpful to verify from the Admin Panel (similar to DGT Boards). The feature is in the backlog for development.

5. Ability to switch the devices during a game will be helpful in case of faulty device / battery replacement.

6. Starting the game recording during a game. For example, if 2-3 moves are played and a device is not working properly. Add the ability to set up the current position should be available.

7. API integration with DGT or endpoint to stream the data to other platforms like chess.com, lichess.org and followchess would be great for the organiser to stream hybrid live. This will allow the usage of more than on device brand in a tournament i.e. DGT and idChess. According to the vendor, it is already available in the current release.

8. Statistics like how many users are viewing the board.

Recommendation to the FIDE Board

Urgent i.e. before any endorsement or recommendation

1. Inter Committee work group to change the tournament rules in the FIDE Handbook to allow for the device and specify the conditions.

2. Promotion is not handled properly. Currently any other piece promotion is considered as Only queen.

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3. In the current FIDE Laws of Chess, the notation belongs to the organiser. In idChess the notation (data) belongs to the vendor. The organiser has access to it, as long as it has a paid subscription. FIDE must decide if it is legally comfortable with it.

As soon as possible

1. Addition of a clock in some shape or form.
2. Better handling of illegal moves. It must be recorded and flagged, but the recording of the game must continue. This needs further discussion.
3. More efficient way to create and configure a tournament. The Admin Panel should be more user friendly.
4. Clarification on subscription. If the tournament has 100 games, how many licences are required?

"Nice-to-Have"

1. Connection to bluetooth cameras.
2. Use the same device to live stream (video) the game as well.

Conclusion

We encountered several issues, detailed in this report that should be addressed. The issue around illegal moves, promotion and importing of games are problematic and must be resolved.

Due to the lack of an integration with a clock, it has some significant shortcomings with regards to the recording of the moves, broadcasting of the games and as an aid to the arbiters. This should be addressed as a very high priority.

In general we are excited by the software technology and the prospects it brings to the game of chess. We believe it is an important effort towards developing chess. However, it is new to the community and could take some time to "settle in". The interfaces, especially the Admin Panel is not intuitive and the help of experts are recommended to

enhance the experience.

References

1. [FIDE Handbook](#)
2. [Live Chess Admin Panel](#)
3. [Promotional Video 1](#)
4. [Promotional Video 2](#)

Addendum A - Controlled Use Test Cases

Arasu B	Fungirayiini Mushaninga	Hendrik du Toit
1. Recognition of illegal moves		
- Illegal moves are not recorded. After illegal move correction, idChess is sometimes not able to continue recording.. - If the illegal move is corrected without much disturbance on the board, the recording continues accurately.. - No option to restart, when the game recording is stopped.	- idChess did not recognize the illegal moves. - The system added some moves never played e.g I played Qd5 from Qd8 whilst all the pawns were still in their original position and Qa5 was added and some other moves as well that were never played.	- Putting the king in a pin and playing the pinned piece does not get recognized as a move and it therefore not notated. E.g. 1. e4 e5 2. Bb5 d5; d5 will not get notated in the case and playing 3. exd5 will also not be recorded.. - The application does not correctly place the piece (incorrectly notates) in the case of an illegal move where a piece moved incorrectly. For example: Playing Ng3 from a starting position would cause the application to notate Nh3.

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2. Resetting the game after an illegal move		

• If an illegal is corrected in the same move, that is before the opponent moves, the recording continues most of the time without any issue.
• If there are a couple of moves made after the illegal move, there are 2 different responses from idChess.
  ○ Stop recording .
  ○ Record wrong move and game continue recording, but the recording stops when there is a piece/square that was incorrectly recorded previously.
	• If the board is reset and corrected after an illegal move idChess application is failing to recognize this, the app adds some dummy moves. There is a delay after resetting the board after an illegal move and before the correct position before the illegal move is set. (Retracting a move, if you are returning the pawn to its original position before illegal move, the pawn is actually temporarily recorded to have been moved forward, any other piece retracted or moved back to its original position before illegal move is actually recorded as another move temporarily, after some seconds, the correct reset position is set with the moves before illegal position.)	• There is a small delay in correcting the notation after an illegal move was corrected within one or two moves following the illegal move (the notation will show the correct game).
		• A correction that takes place after three moves (or more) after the illegal move does not get fixed in the notation; i.e making an illegal move on move 5 (black) and playing on until move 8 (sometimes even 7) will not get fixed. The whole game is incorrect from move 5.

3. Disconnection of the phone		
• Internet disconnection: No problem when the phone lost	• **Longer disconnection** idChess app fails to reconnect back to the game the only option is to end the game on the app	• I couldn't find any problems with losing internet connection. If there are no mistakes in the notation when the recording device regains

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the internet connection, recording continues.	● **Shorter disconnection** idChess app reconnects back to the game.	internet connection. The feed will be updated accordingly online irrespective of the disconnection time (only tested for up to 5 minutes without connection) and number of moves made.
● Distraction to phone setup:	● **Phone Lock**	● Minimising the application for a short (couple of seconds) duration is not a problem and the application keeps on notating moves. However, if the application minimises and the phone locks itself (or locks itself for any other reason) the notation stops completely.
○ If the phone camera vision is changed with no move made during that period and the phone setup is corrected the recording continues without any errors.	If the phone locks itself during recording for some reason, the recording stops completely and you can not reconnect to the game.	
○ if there are moves made, the same behaviour as in (2) is observed.		
○ If the disconnection happens before the 5th move of white and after recording the 4th move of black, and the app reconnects after black 6th move of black the app continues to record from the		

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7th move. ○ Fails to continue recording and the only option is to end the recording.		
4. Pieces getting knocked over		

● Most of the time the dummy moves are recorded which lead to incorrect game and the recording stops when there is impact to the dummy moved piece or square.
 	
● With less distraction on the board the game recording continues.
	● The idChess App sometimes doesn't record anything, and other times it records its own moves that have not been played, and after you put back the pieces the recorded moves are not removed but other moves which are added actually puts the pieces back to where they were before being knocked over e.g. if your pieces are knocked over at move no. 6, if Queen is on d8 idChess app can add moves no. 6 … Qe7 & 7…. Qd8, when you continue after putting back pieces you will be on move no. 8 but it will be the position before your pieces are knocked over: **Problem** is the addition of dummy moves	● The application has a weird interaction in this scenario. I've found that it does any one of the following things:
		    a. Knocking over one piece, fixing it, or making your move first (in most cases), gives the correct notation.
		    b. Knocking over multiple pieces, making your move, then fixing it leads to "dummy" moves that never happened. The application (sometimes) ends up with the correct position, but the notation leading to this position is incorrect. It seems like knocking over more than one piece leads to problems. This is sometimes

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		saveable if the pieces are fixed before making the move you wanted to make.
5. En passant		
● No issues	● The idChess App is able to recognise the en passant move and records it accurately	● No issues.
6. Phone on different heights		
● If a green mark over the board appears the recording works fine. ● However if the phone height is too high (max height when the green box is displayed) to the board sometimes the error seems to be high while there are piece adjustments.	● The idChess App is able to recognise the board at different heights once positioned appropriately	● As long as the application makes the green square on game start and neither the board nor the device moves, the notation is correct. ● If the phone angle is a bit too much over 45 degrees (about 50 degrees) this can cause the green line on the furthest file (h or a file) from the device to be significantly smaller compared to the green line of the closest file. In some games this led the "dummy" moves on the furthest file that got notated, but the moves were never played. This is also influenced by the distance (& hight) of the device from the board

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7. One player moves multiple times		
● Given the first move is legal, the second move is not considered. ● When a player moves to e3 but does not take the hand completely and then plays e4 the idChess considers e4. ● But when the player moves e4 and then takes back and moves d4 that is not considered by idChess.	● The idChess App fail to recognise multiple moves by same player and records additional moves that have not been played	● The application does not record the second move by the same player. It does continue recording, but the missing move causes the notation (and the online board) to not match the real board. The application also adds "dummy" moves to compensate for the "missing move" by the other player.
8. Response in a blitz game		
● No issues observed if the game is perfect. But when the game is having adjustment and some distraction on the board, observed dummy moves in 2 out of 5 games tested.	● The idChess App is able to recognise and record moves in a blitz game when they are correctly placed in a square, if the piece is not placed correctly in a square the app adds some dummy moves.	● Assuming correct initial conditions, we could not find any problems here.

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9. Incorrect Initial Board Setup		
● As per idChess the it records the piece is in the correct square. 1. d4 e6 2. c4 Nf6 3. Bf4 d5 4. e3 Bd7 5. Kd2 Ne4+ in the above king and queen was placed wrongly and Qd2 was placed in 5th move but it records the move as K2.	● The idChess App can not recognise wrong initial board setup and records its own moves that were never played on the incorrect placed pieces	● We don't always get the same result and this depends on the "level of incorrectness of the initial board". For example, if you swap just the knight and bishop, the application does not always recognise this and gives a green square. The application will allow you to play the game, but the notation will be incorrect and it views the night as a bishop and the bishop as a night when they move. However, if the pawns are not correct in their initial position it will complain by not focusing. Also, we were able to castle with the queen (as recorded in the notation) when swapping the king and queen in their initial positions.
10. Vision is blurred (device viewing is obstructed while a move is made)		
● If the app shows a green box and recognizes it then the app works	● The idChess App is able to recognise and record moves even if the vision is blurred as long as the app shows the green box, the moves will be	● The application detects up to one move per player when the view of the board is completely obstructed. I.e obstructing the vision, playing

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fine. ● There are few settings to change the board colour and piece style in the app setting. Some improvements were observed instead of dummy moves when I have adjusted the settings.	recorded accurately.	one move for white and black, and removing the obstruction will lead to the correct notation. However, playing 2 moves for any colour will lead to incorrect notation.
11. No clock		
● No clock, recording. Suggestion can be a clock with bluetooth connection or any cable from the clock to device (as like DGT) to extend the capturing the time.	● The idChess App does not have an inbuilt clock, meaning players have to use a separate external clock, so for broadcast, spectators / people following games are not able to see the time controls for each player	● This is problematic for game monitoring and the viewers.
12. Import of players list		
● Yes, able to import the Players data.	● The idChess App is able to import a players list, that you can use when adding players' names to the games	● No problems importing the exported player's list from

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	during a tournament to avoid errors.	Chess-results for Round Robin and Swiss.
13. Adjusting of Pieces		
• I have tried a few piece adjustments during the game. There are scenarios where it works differently. • Few times the piece adjustment is considered a move. 1. d4 e6 2. c4 Nf6 3. h3 Bb4+ 4. Nc3 Nc6 5. e3 b6 6. a3 Bxc3+ 7. bxc3 O-O 8. Nf3 Ba6 9. Bd3 Na5 10. Nd2 d5 11. O-O dxc4 12. Be4 Nxe4 13. Nxe4 Nb3 14. Rb1 f5 15. Nd2 Qd5 16. Nxb3 cxb3 17. Rxb3 Bxf1 18. Kxf1 Rfd8 19. Bd2 Qc4+ 20. Kg1 e5 21. Qb1 exd4	• The idChess App records its own moves that were never played, if it fails to read/recognize the move played	• No problems with adjustment of pieces. You can adjust a piece on the same square as what the application has noted the piece to be on.

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In the above game after exd4 king on g1 is adjusted and cxd4 is played but idChess captured as below. 22. Kh1 Rac8 23. Kg1 Ra8 24. cxd4 g6 25. Rb4 Qf7 26. Qc2 c5 27. dxc5 bxc5 28. Rb5 *		
14. Piece placed on between two squares (before adjustment)		
● If the piece is placed slightly touching the adjunct square(it happens in blitz games) there is not much issue. ● If the piece is not placed properly the issue is it records dummy moves and leads to a situation the recording stops at some point.	● The idChess App does not record the move and add its own moves that were never played	● If you place a piece (for example the queen) in between e4 and d4 (with the intention of placing it on e4, and the application records Qe4 this will not lead to any problems. However, if the application records Qd4, you adjunct the queen to e4 on your next move, and then play the move you wanted to play, this leads to the problem of moving 2 pieces in one

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		move for the same player.
15. Lighting Requirement		
● Tried with minimum light it worked..	● The idChess app works fine with very low light.	● The applications records move with very low light. We turned off the lights and used only the light from the laptop screen and this was sufficient.
16. Board Piece Identification		
● In certain positions, idChess starts recognition incorrectly. Say for example in a scenario Rd1 was played but idChess shows it as Qd1 but Queen was already captured	● The idChess app does not recognize pieces, it just makes use of the initial board set up, and whatever piece you put in any square, it is considered to be the piece that should be there in the initial board set up.	● Refer the notes on "incorrect initial board setup". We found that the application does not recognise the shape of the piece, but rather takes the piece for what it's supposed to be based on the initial starting square of a correct board setup.
17. How does the app work in Tournament mode?		

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• Need a better way to create a tournament. Is there a feed like DGT that will provide a temporary hosting? • Is there an API to take the feed of the games? • How does the subscription work? If the tournament has 100 games, how many licences are required?	• Could not import round data using the "Import Round Data" button, it continuously gave errors and gave a warning that it will delete the tournament by proceeding to select a file, which is not clear • Downloading PGNs after tournament, after round and during the game works fine	Observations made in tournament mode: 1. Exporting of PGNs after rounds work. 2. Exporting rounds work. 3. We could not manage to import a round's information with the "import round data" button. We tried by exporting one round of a swiss tournament from Chess-Results. There is not option to export one round for a Round Robin tournament so we were unsure how to test this. The error message we get when trying to import a round is unclear since it's warning that we will delete the tournament by proceeding by selecting a file. Also maybe having an error that tells the user the file

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		selected is of incorrect format would be good. 4. We struggled to finish a game properly. We completed the game on the recording device (set result and player names), but the information never displayed correctly on the tournament side for that board. 5. When you export a round it creates a zip file containing separate PGN's for each board in that round. I'm sure uploading these one-by-one to chess results will be possible, but is problematic in large tournaments..
18. Promotion of a Piece		
● Queen promotion is considered. I have unsuccessfully tried to	● Piece promotion to a Queen, Bishop and Rook is considered to be a	● Always promoted to Queen.

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promote to Rook and/or, Knight. idChess recorded it as always Queen.	Queen Promotion in all cases ● Piece promotion to a Knight is considered accurately after it plays its first move after promotion. e.g. move is first recorded as 15…f1=Q 16. Bc5 Ng3 after playing Ng3 the recording autocorrects to 15…f1=N 16. Bc5 Ng3. Only promotion to a Knight and Queen is correctly recognized.	
19. Recording the result		
● Currently the results have to be recorded manually once the game is ended. ● This might be difficult in case of blitz if a manual intervention needed to record all the results.	● Since the recording is manual it poses a problem in cases of blitz tournaments especially if there are many games being played at the same time.	● No automatic recording of the result.
20. Login Process in Admin Panel		

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• Login was successful with the given login. • Signup process is not clear.	• Didn't face any challenges during the login process in the Admin Panel using the given credentials	• Signup process not clear.
21. Create Tournament in Admin Panel		
• Tournament creation was successful. But the date selection is not so easy with a small screen display. • What is the use of giving the chess-result link not clear on the use of the link?	• Was able to create Tournaments in the Admin Panel without any problems	• Available but small and difficult to use.
22. Starting a Tournament		
• No issues for round 1. • For the round 2, there were issues like error(not clear when error is notified)	• No challenges faced	• Ok.
23. Ending a Tournament		
• No issues found. • Would like to understand more on what would be the impact if the tournament is not ended? • What happens if the results are not updated?	• No challenges faced except the ability of the app to accept the ending of a tournament when there is a game that is in progress which does not have a score.	• There are several challenges. Not being able to end a game with a "signature" sequence or position is problematic.
24. Connecting a Device to a Tournament		

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● Easy to connect to the device with the QR scan. ●	● No challenges faced	● Work as expected.
25. Starting a Round		
● Easy to start	● No challenges faced	● Work as expected.
26. Edit Tournament Details in Admin Panel		
● No issues..	● No challenges faced	● Work as expected.
27. Game Editing Feature in Admin Panel		
● Easy to edit the game. ● But not clear when the game will capture any dummy move. ● Is the Edit log captured? ● If a game is edited in the back end how it is captured.	● No challenges faced	● Work as expected.
28. Switch Between Rounds		
● No issues found.	● No challenges faced	● Work as expected.
29. Broadcast of Tournament		
● When I tried to access the tournament link, I was not able to view the boards.	● No challenges faced	● Work as expected.

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30. Enter names of the tournament participants		
• Importing was easy • But I'm not able to view the pairing after importing. just board with the details visible.	•	• Work as expected. • Procedure is cumbersome and time consuming.

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Addendum B - Tournament Test Conditions

Zimbabwe World Cup Qualifiers 2023 Open & Ladies (NA Fungirayiini Mushaninga)

Details

- https://chess-results.com/tnr695828.aspx?lan=1&turdet=YES
- https://chess-results.com/tnr717338.aspx?lan=1

Observations

- The games can only be recorded from the initial chess position.
- Better and more accurate recording of games if the phone is in horizontal or landscape position.
- In addition to setting the phone to "Do not Disturb Mode" on the idChess App, you must also activate "silent mode". Even with "Do not Disturb Mode" activated, some functionality might be active depending on the model and make of the phone.
- Some disturbances on the board resulted in dummy moves being recorded e.g. the idChess application will have 41 moves whilst the players are still on move 26 due to disturbances.
- After completing a game, players tend to set the board to show a draw or a win. These are recorded as additional moves added and leads to inaccuracy on the PGN files.
- If the phone runs out of battery power during the game, the game recording is lost. However, if there is a broadcast, the game remains on the server but will not be saved on the device.
- If you update a score on the wrong board by mistake, recognition ends and can not be rectified. You must then manually add the moves after the game has ended.

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LITTLE ENGLAND 3rd & 4th INTERNATIONAL FIDE RATING OPEN and Below-1600 CHESS TOURNAMENT 2023

Details

- https://chess-results.com/tnr714445.aspx?lan=1
- https://chess-results.com/tnr714446.aspx?lan=1&art=0&fed=IND&turdet=YES&zeilen=99999
- 5 games running parallel.
- Time control: 90 mins+30 secs increment from first move.
- 2 rounds for the first 4 days and one round on the last da.
- Devices Used:
    - Samsung Galaxy M32 5G
    - Motorola One Action
    - Poco
    - Realme X2
    - Redmi Note 10

Observations

- Result for forfeit is not available in idChess. Only 0-1, 1-0 or ½-½ is available. In our 1st round we had a forfeit and were unable to record the result.
- Almost all the games were more than 4 hours and sometimes in excess of 5 hours. Most of the mobile device batteries drained very before the end of the round and switched off. In the later rounds, we managed with additional power banks.
- During the use of phones in 2 rounds a day, some phones overheated due to the camera being switched on for almost 9-10 hours.
- When a game is in progress for some reason the recording didn't proceed there is no indication. In one of the games after move 5 the recording stopped, we observed around 15th move while there were no indication that the recording have an issue.

- **Use Case 1: Illegal move claim**
  - During the explanation of the player to the arbiter, idChess captured some dummy moves for those actions.
  - With no pause function, the recognition of the game was not useful and had to be reconstructed manually.

- **Use Case 2: Sync set-up between idChess App and Web Admin**
  After importing the round data on the Admin panel, there is no sync between idChess App and Web Admin.
  - The name and details must also be captured on the idChess App.
  - After the game is over the results must be captured on the Web Admin.
  - This is time consuming and unlikely to be practical during Rapid and Blitz tournaments.
  - There is no option to swap the mobile device during the game in case of any issues with the device.

  - **Expectation:**
    idChess App and the Web Admin must synchronise the information. Alternatively there should be an option to swap the mobile device at any point and be able to start from the current position..

- **Use Case 3: Joining a tournament from idChess APP**
  In one of the rounds we started the game manually by selecting the "Join" option in idChess App by entering the tournament id and board number.
  - When we imported the round data on the Web Admin, the games were not picked up.

  - **Expectation**:
    The game should be picked up as we have joined the tournament from the app.

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- **Use Case 4: No option to delete extra or dummy moves**

  When the game was over and players started to analyse, those moves were also captured.

  - There is no option to delete the extra moves, we have to delete move by move.

  - **Expectation**:
    - The player should not record the end of the game on the device. It should be ended with some move pattern on the board.
    - "Set Last Move" option. The administrator would be able to discard moves from a certain point.

- **Use Case 5: Import failure due to unknown column**

  If there is an unwanted/unknown column in the import file, the import fails.

  - **Expectation**: If the required columns are present, the import should be successful.
  - Error has to be clear and more self explanation.
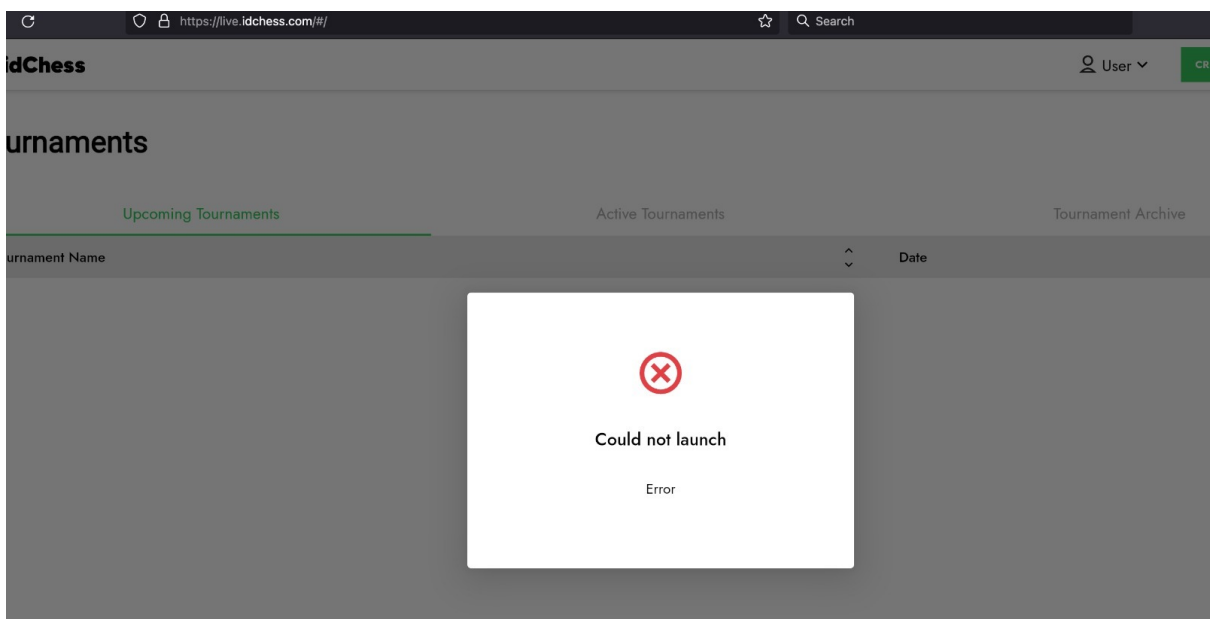
- **Use Case 6: Handling of irregularities during a game**

  In case of irregularities i.e. a touched piece, idChess records dummy moves.

There is no option for the arbiter/operator to retrieve the moves from memory. Instead, the arbiter has to change the move in the Admin Panel.

- ○ **Expectation**
  - ■ The arbiter/operator should be able to correct the move on both the local device or in the Admin Panel.
  - ■ As currently the arbiter/operator has to fix the move in the Admin panel and by the time players played a few moves, confusion reoccurs.
  - ■ This is not practical in a Rapid and Blitz game.

- ● **Use Case 7: Continue playing while updating the moves in the Admin Panel.**
  The arbiter observed an irregularity on the board and while he/she was updating the moves in the Admin Panel the players continued playing the next move and that created more confusion in the move recording.

  - ○ **Expectation**:
    If there are any changes going in parallel it should be shown in an admin panel, and the live arbiter should be able to correct it.

- ● **Use Case 8: Clear errors**
  In one of the rounds the phone was not able to recognize the board, but the same phone was used for the previous rounds. There were on light issues. The issue was resolved by reinstalling the app on the same phone.

  - ○ **Expectation**
    Error should be more clear and should be user friendly.

- ● **Use Case 9: PGN Files**
  IdChess provides the PGN files in a zipped file containing a file for each device. THis is problematic and time consuming to upload the PGN files to chess-results.

  - ○ Expectation

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- Single PGN for the Tournament
- Single PGN for the Round.
- Single PGN for the Game.

- **Use Case 10: "Do Not Disturb" mode not effective**

  After turning on the Do Not Disturb mode, some calls and notifications show-up. The notification is shown on top of the idChess app, and the entire app is not visible sometimes.
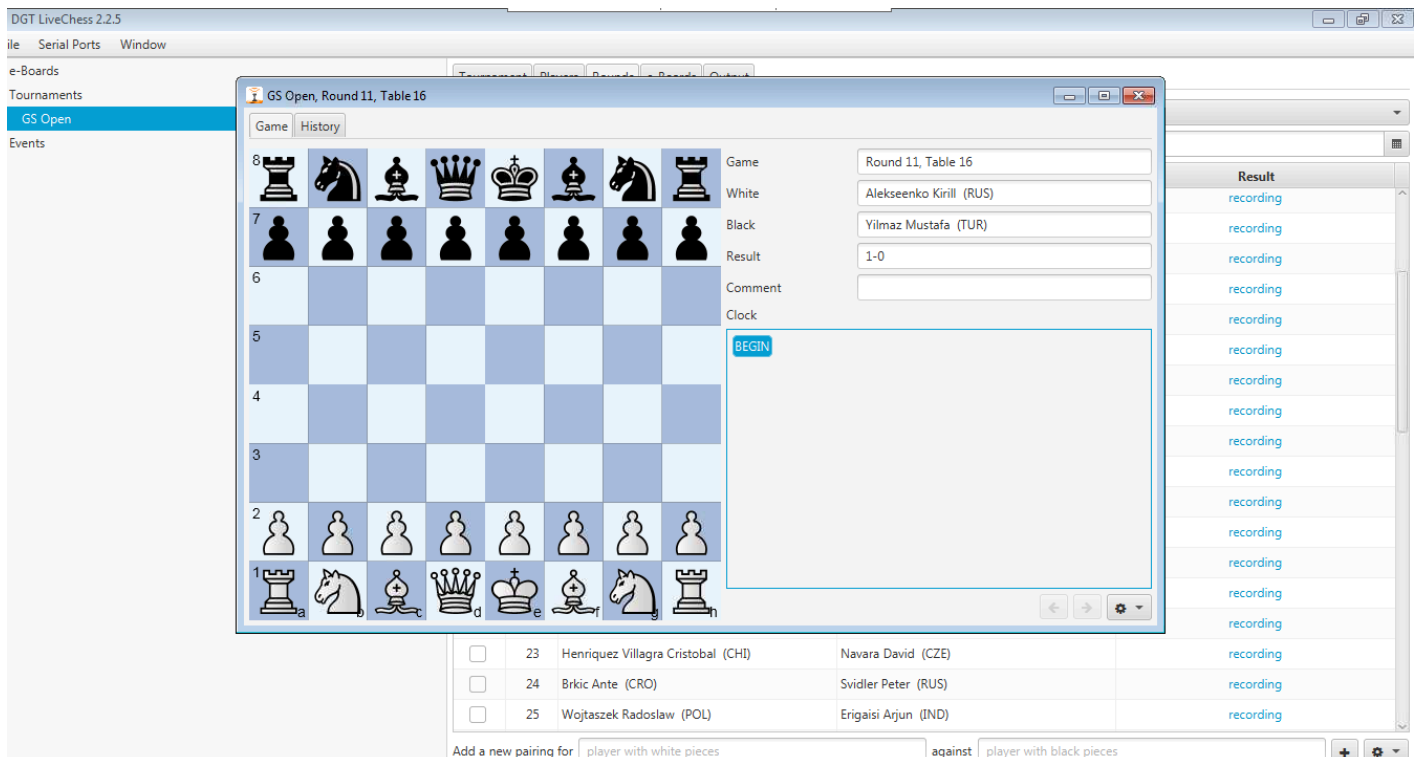
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Possible bugs:

1

Result appearing in a new round of the certain game though main 'Players' tab is showing only 'Recording' in 'Result column'


Result appears in a PGN file for the game and it cannot be checked from program anywhere.   Events log is clear.

Possible cause: board was not setup into initial position or initial position was removed before the game start. But this is not clear. There were multiple cases when all boards are setup in 'BEGIN' position but before round start we found results in a PGN file of a new round. Names were from new round already.

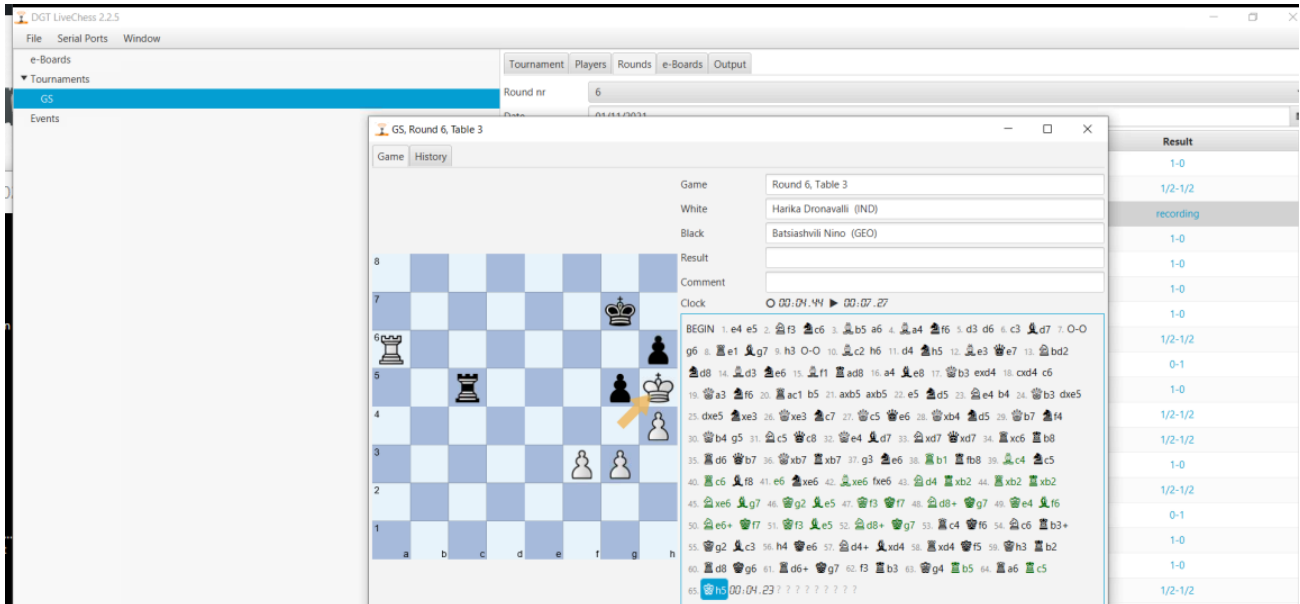## 2

Moves do not correlate in 'History' and 'Game' tabs.
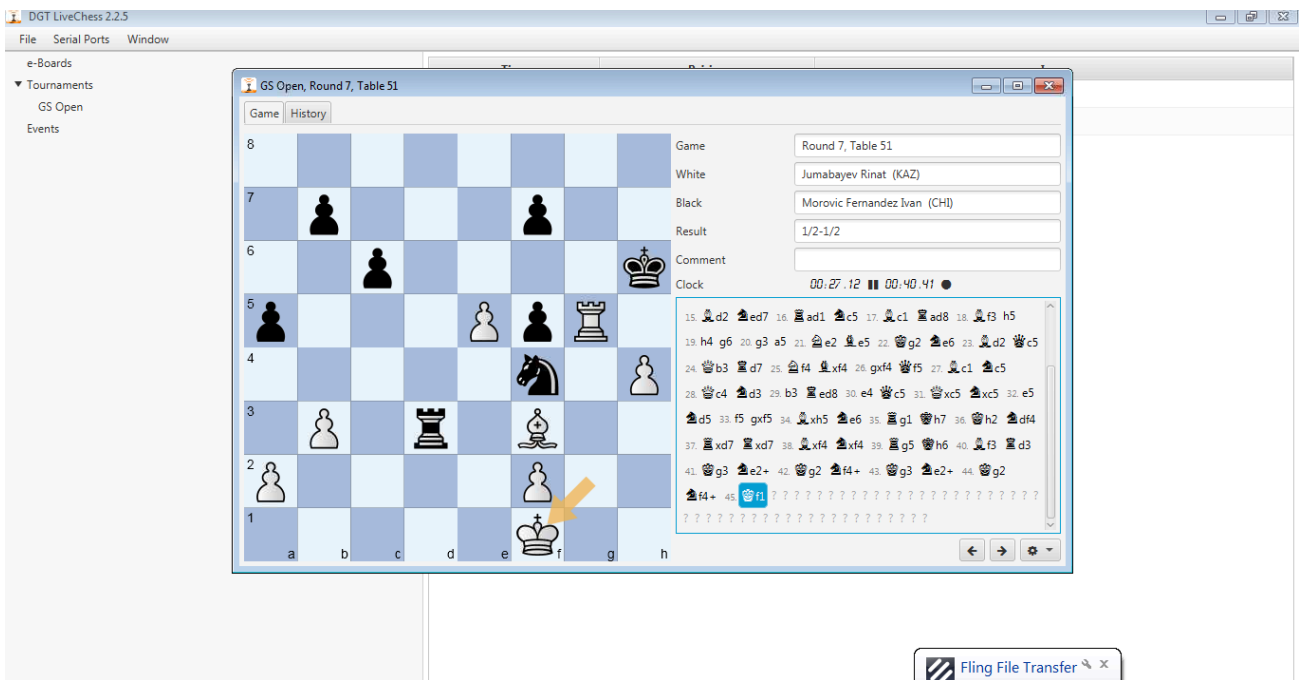
Same board but Tab is 'History'. No Move Kf1 in history and it appeared by itself – was adding itself not depending on previous moves.
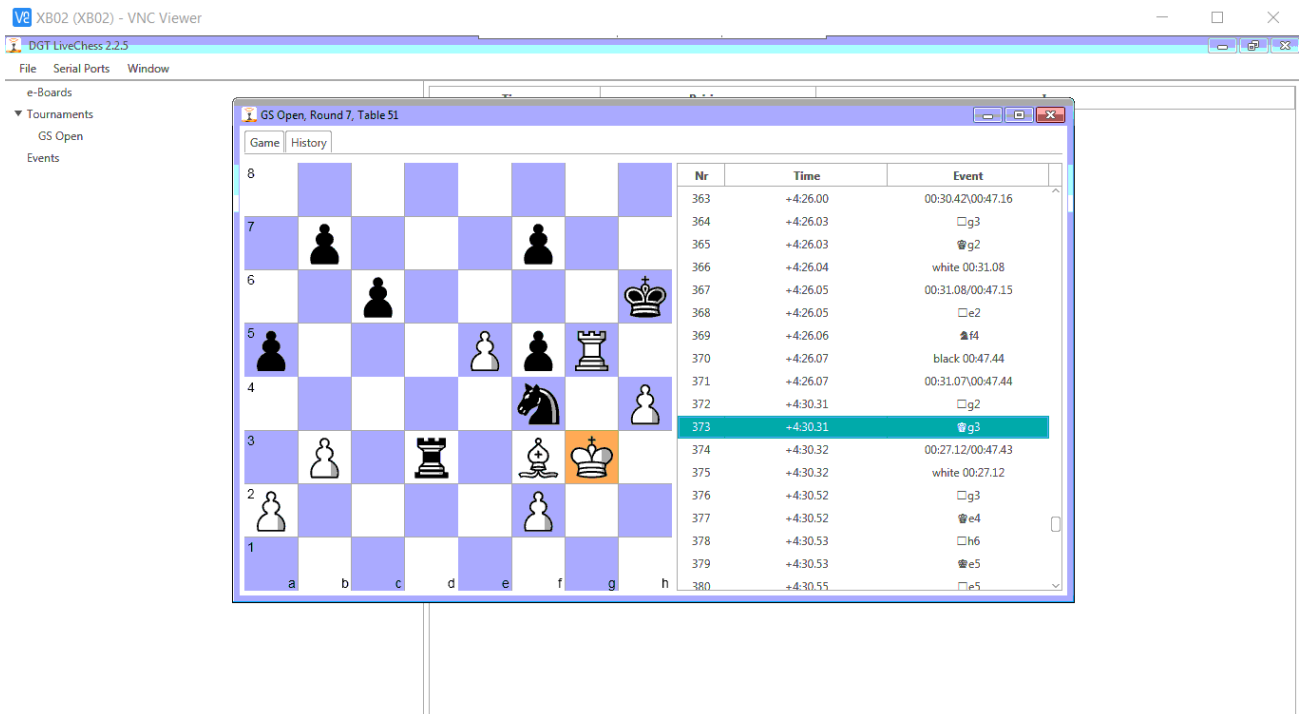
3

'Events'   tab empty but whole game has some problems with moves and game has some incorrect moves.

- moves are not reported to Events log
- This bug prevents operator of multiple games to see any error and wrong moves continue till someone sees analysis and realizes that move was very weak.

Needed: reporting to events log.

Part 2 Usability notes:
Background

My previous experience is based on 1.4 Livechess (LC1.4) and I'm managing boards since 1998. FIDE has boards with firmware 1.9 and up. This is the majority of boards and FIDE will have to continue using it.   Livechess is LC2.

I cover difficulties and problems which came during the work with LC2 and which may input into further development of LC2 to be safe and easier to manage. I will concentrate on problems. It does not mean that product is bad. This is like bug/error report. Connected boards 50+ to one PC. I would appreciate if items noted here can be fixed. The most important are in CAPS. Please return or add ICONS for boards monitoring. Below are details.

All below is based on classic and blitz experience with big number of boards.

1. Boards setup in LC2
Columns cannot be expanded anywhere. Sorted anywhere.

'E-boards' tab:

Columns cannot be sorted – so in we have 10 COM ports with 12 boards each I cannot list them in a way to check which board is missing e.g. in port COM6. I see in general window 'Manage COM ports' that I have 11 boards on COM6 but in 'E-boards' they are sorted by serial number and if I check line by board number I will not be able to find it fast.

'E-boards' lower left diagram is not updated automatically. If I make a move on the board I cannot see it immediately but select another board in the list and then return to needed board. This consumes time it is needed to check fast if board has bad squares or pieces before event, on stage of setting up, without any tournament input yet.

'E-boards' whole list – does not have clocks in a list so when new boards are connected one cannot check function of clocks immediately. For comparison LC1.4. screen where there is all information about boards in one screen without tournament details input. For connecting 100s of boards check of all items – boards, clocks, batteries in one screen is important.
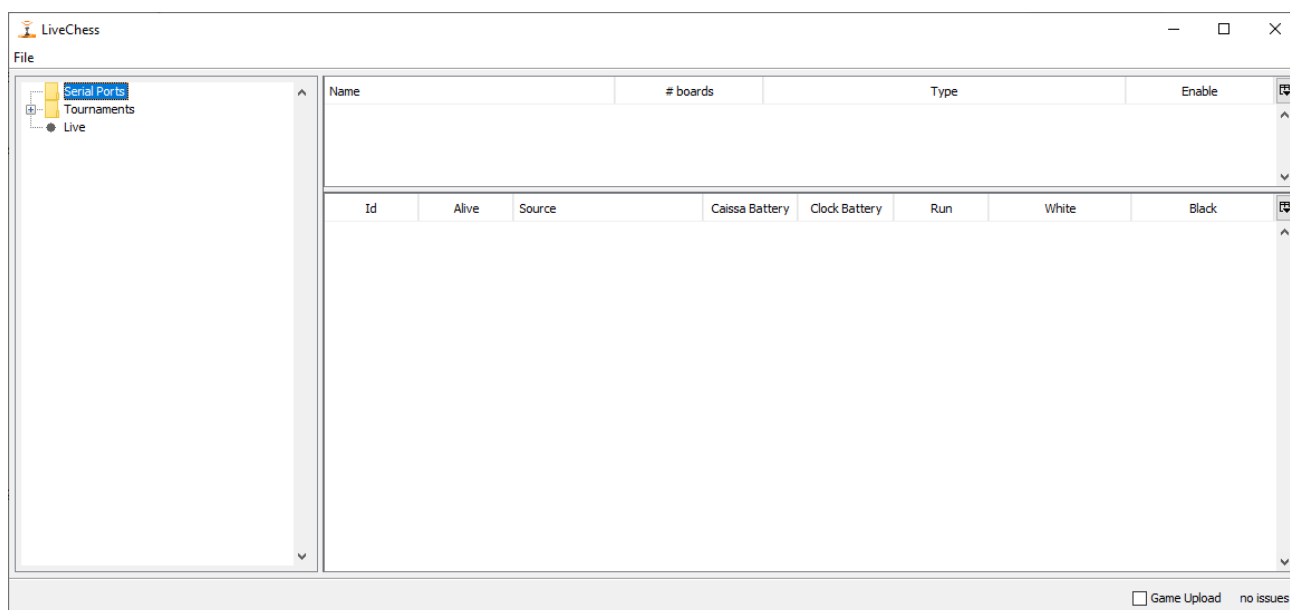
During setup it is very important to have such a summary screen and it can be in 'E-Boards' – just by adding Battery info, Clocks info, Update of lower left diagram automatically, sorting by columns and showing if board has a game running and number of moves, and result if there is result.

So   'E-boards' list of LC2 is much less informative than LC1.4 and requires to setup a tournament and then got to 'E-Boards' tab inside the 'Tournaments' to e.g. check clocks in a list and not clicking one by one the list of boards.

Tournament interface:

'Rounds   tab does not give any error when PGN is not imported.
'Rounds' and other lists a tournament cannot be expanded or sorted. Meaning that e.g. blitz time control shows 00-00… in a 'e-Boards' list under 'Tournaments'.

'Rounds' tab has Result text values 'recording', and results. Everything in one color. If e.g. one needs to check not finished games or games where result was not setup – you need to scroll down the list and visually count 'recording' blue text.
- scrolling take a lot of time
- visually very hard to count and find 'recording' if one has e.g. 120 games on one PC

For comparison LC 1.4 below
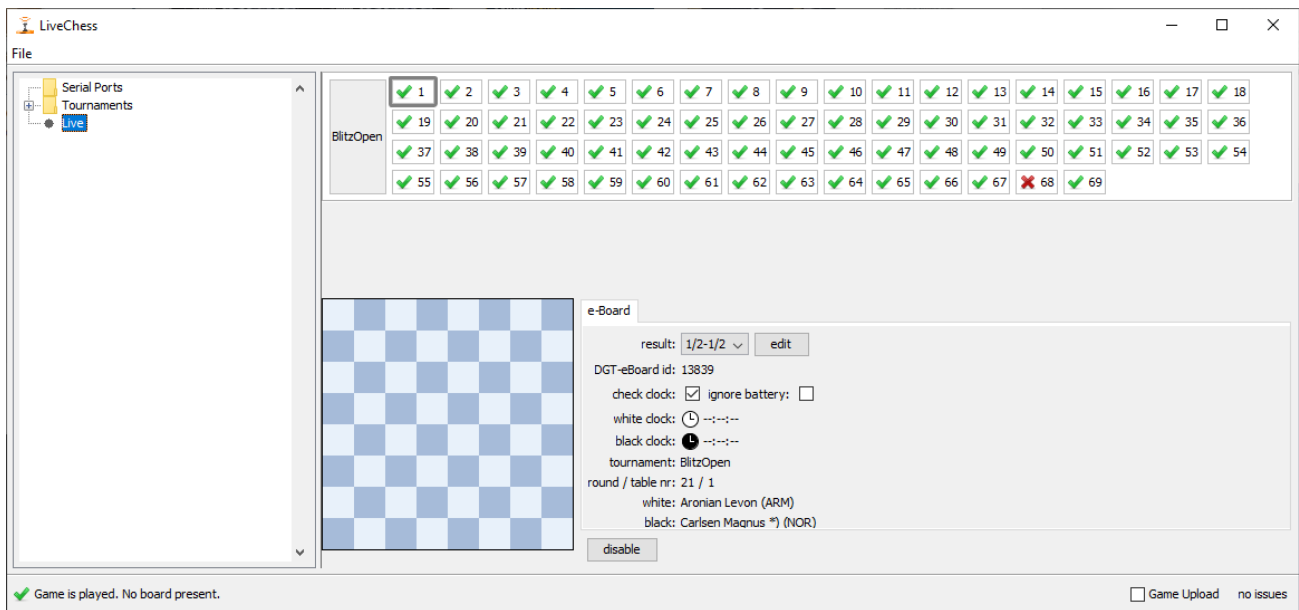
- all games can be seen at once without need to scroll. So operator can just look and screen and see e.g. how many games are still playing or have problems.
- COLORING is very important and different colors for 'error reconstructing', 'wrong lever position', 'clock is not running', 'result is on the board' or 'recording' is VERY useful.
- icons instead of the list save a lot of space. You can leave the list under the icons set and leave usability that e.g. game correction can be done is a separate window like now in LC2 but general overview of boards was much more informative and easy to fit in one small screen in LC 1.4

So more convenient look for 'Round' and 'Event' tabs is top with fixed icons and colors for various errors, lower left board and list under the icons if you wish but please add coloring between 'recording ' and results. Below can be both for 'Rounds' tab   'Events' screen (e.g. you take there only problem icons)
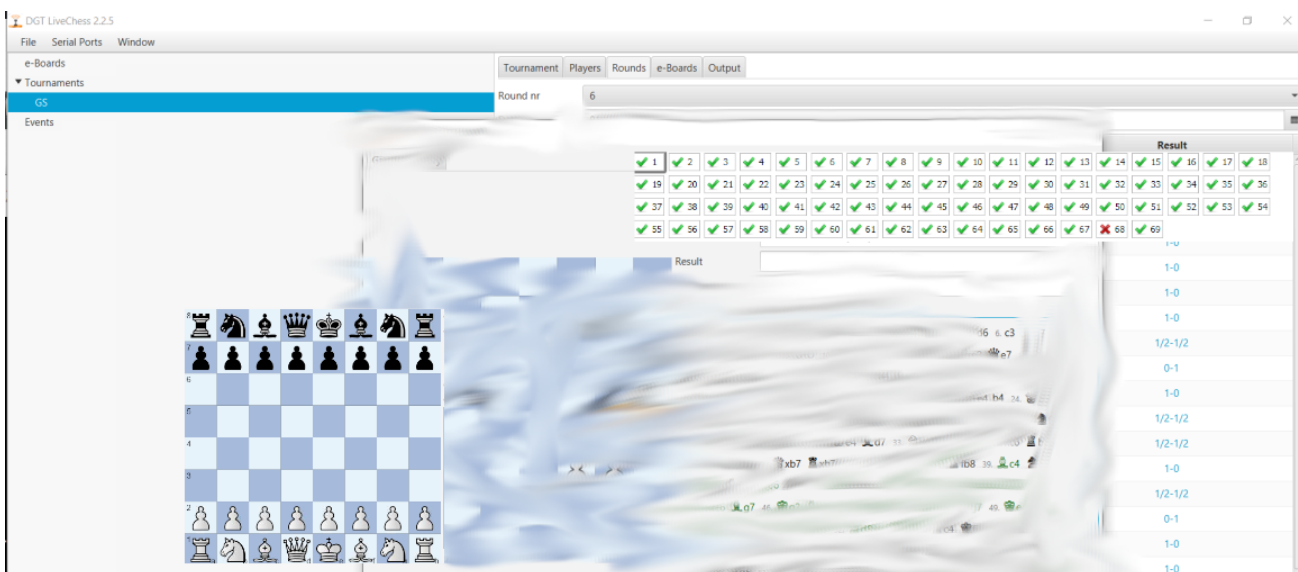
'Events' tab not always displays errors. This is hard to reproduce but it happened almost every round. The biggest drawback of the 'List' approach for 'Round' and 'Events'. In a blitz they finish all in 1-2 minutes. So list of 'Events' begins to 'run' – 'this game seems to be finished', 'error reconstructing' etc. so there is NO CHANCE operator can click the game he/she wants. List just runs and when you click already another game is in this place. So operator cannot check or put any results and game moves on the boards he/she wants. ICONS approach will make list statics and operator will be able to do his/her job. VERY IMPORTANT for blitz events. WRBC is coming next month.

Results setting on the board: LC2 requires incorrect move to be made prior to result kings setting. In blitz players put the result. Arbiters explained to me that they will not listed to 'make incorrect move and then setup kings please' notice. So it lead to situation when 70% of games go to 'Events' log with error 'Game appears to be finished' and operator has to click 'Make last move' and then 'Stop recording' all these with 'Events' log 'running' as all games start to finish so
1. operator has to 'catch' the correct link to a game in 'Events' log, if success then 4 more extra clicks – Open game, 'Set last move' and 'Stop recording',close window. Then another game. With 100 games all finishing in 1 minutes – we just need to stop recording and not put any results to be able to prepare for next blitz round.
Possible solution: to enable 'strict' result fixing like now in LC2 and 'moderate' when just 2 in center is ok for a result like in LC1.4

Game corrections – extra clicks – open drop down 'Set last move', 'Stop recording' – why one needs a dropdown, just buttons as in LC1.4 are better and faster to use.

Maybe its better to add these records   and confirmation if necessary
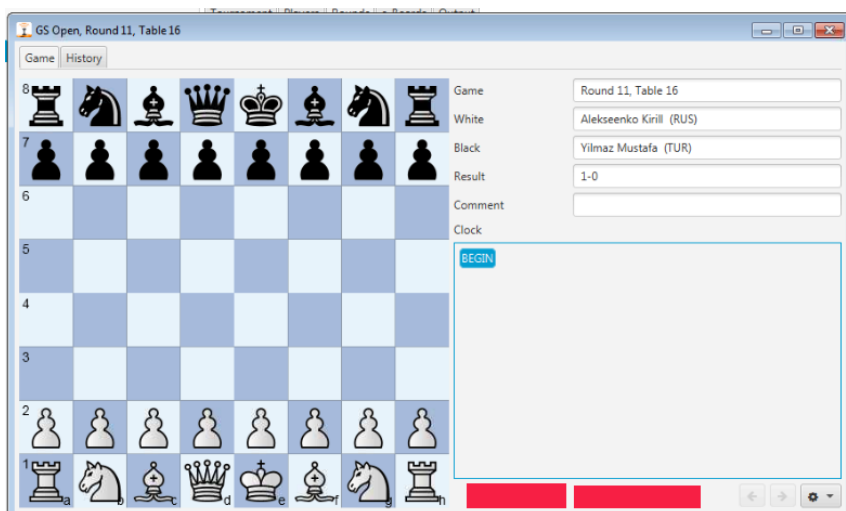
'New game' or 'New round' in LC2 board resets only when a board was put into 'BEGIN' position. In most cases in Blitz it is very hard to do – some pawns are missing on board in LC (not physically). So in LC1.4 one could press 'Start new game' and it started recording from move 1.
In LC2 is causes the previous game to appear in a new round. We tried to overcome this by making 'REMOVE RECORDING' for all boards in a new round, then 'STOP RECORDING' and only then 'START RECORDING' it did not help. Old game appeared anyway if board was not setup into 'BEGIN' position. This was not a problem in LC1.4 and there should be a button for a game like in LC1.4 – 'START NEW GAME' which should reset the board not depending what it has in a memory or 'START RECORDING' should reset the board and set to recording from a new move.

'E-boards' tab in 'Tournaments'
Columns are not expandable or sortable. Missing information about status of a game e.g. running, last moves or at least number of moves.
IMPORTANT drag and drop reorder should be done after confirmation. We had several occasions of non intended reordering

Memory consumption
on WIndows7 and Windows10 platforms LC2 takes 1.5 GB after 1-2 hours of work and more with each day. So it is not possible to have it up for a tournament all the time. LC1.4 did not have this problem.

Viewer:
The list should contain name of the tournament, Round, names and result in 1 place. So operators can switch from finished games to non finished and have preferable all in one easy to fit screen list not to scroll. In LC1.4 it was possible to have all in 1 list and it was very easy to see unfinished games.
Also filter by name will be helpful.

Delay Feature Required

The Problem

There is no way of delaying the games with the current DGT software. There is no "delay" setting that you can configure in the GUI. As a result, there are two solutions if you want to delay:

1.   Write your own program to delay the upload.
2.   Upload the live PGN to the platforms (Chess.com, Chess24 etc.) and use their inbuilt features which delay the games.

Essentially, for reasons that I understand, 1 was thought preferable, because it ensures the platforms do not have the live games at all, and thus better for fair play - which is the whole point of delaying the games in the first place. The downside with 1 is that, compared to 2, the self-written scripts get comparatively little testing, and so we have situations like what happened yesterday.

With 1 not working, we end up with 2 now - the live PGN is going to Chess24, and they produce the delayed PGN which is made available elsewhere. The other downside to this is that now all the other platforms are relying on a Chess24 PGN for their display. If you are Chess.com then OK; if you are FIDE, Lichess, Follow Chess... not so OK.

I would expect that in 99% of cases where delay is used around the world, 2 is the solution that is adopted.

The Suggested Possible Solution
Short-term, the issue is solved I understand - with the exception of needing to rely on Chess24 now.

To ensure it works properly in future, we need to:
1. Lobby DGT to introduce this feature ASAP
2. Content ourselves for now with supplying the PGN live to the platform, using their GUI to add the delay (which we know will work), and trusting them not to mess with it to take the delay off.

ADDITIONAL BUGS

Refresh Button

If you see that the game is lagging behind on transmission and then you press the refresh button, it takes time to refresh but after it completes refreshing, you would see that either:

-   The game still lags behind, does not update to the current position
-   Or you actually lose the game completely

Compatibility Issues with Chess.com

Looks like DGT and chess.com not very compatible.
-   it transmits moves not made as early as move 10
-   it's a case of synchronization
-   take back not recognized when dealing with illegal moves
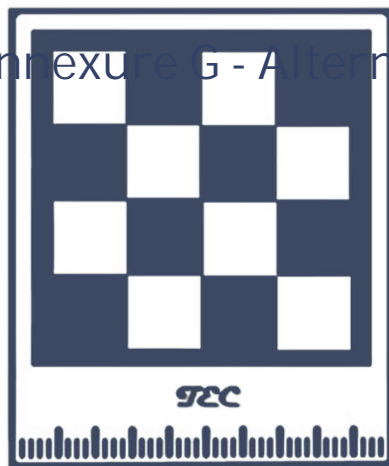
Alternative Scoring System

Report

Author: Technical Commission

Subcommittee: Critical-Tec **-** IA Mario Held (Dept Head)

Document type	Report
Subject of Report	Alternative Scoring System
Document version	1.0
Date	22 September 2022

Background

The FIDE-TEC Commission received a proposal from Mr Shivaji Mookherjee from India. The proposal was discussed by the Commission's Critical-Tec Department..

Request

Dear Sir/Madam,

I am keenly watching the world chess 2023 tournament games being played at Baku. I observed that individual players are continuously noting down every move on the board before he or she settles down for the next move. This definitely affects / interrupts their chain of thought processes and temporarily shifts their attention, in addition to wastage of actual playing time.

I have a simple suggestion to make to FIDE so that players are avoided to note every movements in a piece of paper. This pictorial position of every movements can be recorded automatically from top of the chessboard once the player presses on the clock timer levers. Later the sequential photos of chessboard can be shared to both the players in digital format and also in hard copies for analysis and records purposes.

Hope I could make my suggestion clear to all concerned like players and administrators.

Thanking everyone.

Shivaji Mookherjee
Pune 411045
India

Response

Thank you for your thoughtful proposal suggesting the use of electronic means for scoresheet keeping. The FIDE Technical Commission has thoroughly reviewed your suggestion and has arrived at the following conclusions:

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1. Writing down each move is an integral part of the chess game. The time increment allotted for each move is sufficient to accommodate this activity.

2. Scoresheets serve as an official record of the game and are mandated by the Laws of Chess.

3. Resolving disputes through video recordings would be impractical due to the time-consuming nature of reviewing such footage, especially during tournaments.

4. If we were to rely solely on video recordings, a transcription of the recording would still be necessary for official documentation and publication purposes. Creating this transcription would be both time-intensive and costly.

5. The financial burden of implementing such recording systems would be substantial. Many organisers or federations might find it challenging to bear this cost.

6. Generally, players have not expressed dissatisfaction with the obligation to maintain a scoresheet. In fact, it's common to see players reviewing their score sheets during games. Some might even feel uneasy without a physical record of the moves.

7. At present, the onus of keeping score rests with the player, as per article 8.1.1 of the Laws of Chess. If this responsibility were transferred to the organiser as per your proposal, it could lead to significant legal complications. For instance, if the recording equipment malfunctioned and a player raised a claim that could neither be verified nor disputed, the organiser could potentially face legal action. Additionally, this could open the door for players to make baseless claims, given the challenge of verifying previous moves. The Technical Commission firmly believes that the responsibility of keeping score should remain with the player.

Given the considerations mentioned above, the FIDE Technical Commission recommends that the proposal not be adopted.

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C.04.3 FIDE (Dutch) System

Annex C.04.3 to the Swiss Pairing Rules

Version to be presented at the 94rd FIDE Online Congress in 2023.
__Terms and Definitions__ added at the 88th FIDE Congress in Goynuk 2017. See
https://spp.fide.com/fide-dutch-extras/.

A Introductory Remarks and Definitions

A.1 Initial ranking list

See C.04.2.B (General Handling Rules - Initial order)

A.2 Order

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

a score

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

A.3 Scoregroups and pairing brackets

A scoregroup is composed of (all) the players with the same score.
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 unpaired after the pairing of the previous bracket.
A (pairing) bracket is homogeneous if all the players have the same score; otherwise it is heterogeneous.
A remainder (pairing bracket) is a sub-bracket of a heterogeneous bracket, containing some of its resident players *(see B.3 for further details)*.

A.4 Floaters and floats

a 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).

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

A.5 Byes

See C.04.1.c *(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)*.

A.6 Colour differences and colour preferences

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.
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.

a 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 he 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.

b A strong colour preference occurs when a player's colour difference is +1 (preference for black) or -1 (preference for white).

c 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 he played.

d Players who did not play any games have no colour preference (the preference of their opponents is granted).

A.7 Topscorers

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

A.8 Pairing Score Difference (PSD)

The pairing of a bracket is composed of pairs and downfloaters.

Its Pairing Score Difference is a list of score-differences *(SD, see below)*, sorted from the highest to the lowest.

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.

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.*

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)*.

A.9 Round-Pairing Outlook

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 C.1-C.3 have been complied with.

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.

If it is impossible to complete a round-pairing, the arbiter shall decide what to do.

Section B describes the pairing process of a single bracket.
Section C describes all the criteria that the pairing of a bracket has to satisfy (in order of priority).
Section E describes the colour allocation rules that determine which players will play with White.

B Pairing Process for a bracket

B.1 Parameters definitions

a M0 is the number of MDP(s) coming from the previous bracket. It may be zero.

b MaxPairs is the maximum number of pairs that can be produced in the bracket under consideration *(see C.6~~5~~)*.

> *Note:* *MaxPairs is usually equal to the number of players divided by two and rounded downwards. However, if, for instance, M0 is greater than the number of resident players, MaxPairs is at most equal to the number of resident players.*

c M1 is the maximum number of MDP(s) that can be paired in the bracket *(see C.7)*.

> *Note:* *M1 is usually equal to the number of MDPs coming from the previous bracket, which may be zero. However, if, for instance, M0 is greater than the number of resident players, M1 is at most equal to the number of resident players.*
> *Of course, M1 can never be greater than MaxPairs.*

B.2 Subgroups (original composition)

To make the pairing, each bracket will be usually divided into two subgroups, called S1 and S2.

S1 initially contains the highest N1 players (sorted according to A.2), where N1 is either M1 *(in a heterogeneous bracket)* or MaxPairs *(otherwise)*.

S2 initially contains all the remaining resident players.

When M1 is less than M0, some MDPs are not included in S1. The excluded MDPs *(in number of M0 - M1)*, 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.*

B.3 Preparation of the candidate

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.

In a homogeneous bracket: the pairs formed as explained above and all the players who remain unpaired (bound to be downfloaters) constitute a candidate (pairing).

In a heterogeneous bracket: the pairs formed as explained above 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 A.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.*

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.

B.4 Evaluation of the candidate

If the candidate built as shown in B.3 complies with all criteria from C.1 to C.5, and all the quality criteria from C.6 to C.21 are fulfilled, the candidate is called "perfect" and is (immediately) accepted. Otherwise, apply B.5 in order to find a perfect candidate; or, if no such candidate exists, apply B.8.

B.5 Actions when the candidate is not perfect

The composition of S1, Limbo and S2 has to be altered in such a way that a different candidate can be produced.

The articles B.6 (for homogeneous brackets and remainders) and B.7 (for heterogeneous brackets) define the precise sequence in which the alterations must be applied.

After each alteration, a new candidate shall be built *(see B.3)* and evaluated *(see B.4)*.

B.6 Alterations in homogeneous brackets or remainders

Alter the order of the players in S2 with a transposition *(see D.1)*. If no more transpositions of S2

are available for the current S1, alter the original S1 and S2 *(see B.2)* applying an exchange of resident players between S1 and S2 *(see D.2)* and reordering the newly formed S1 and S2 according to A.2.

B.7 **Alterations in heterogeneous brackets**

Operate on the remainder with the same rules used for homogeneous brackets *(see B.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).*

If no more transpositions and exchanges are available for S1R and S2R, alter the order of the players in S2 with a transposition *(see D.1)*, forming a new MDP-Pairing and possibly a new remainder (to be processed as written above).

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 B.2)*, applying an exchange of MDPs between S1 and the Limbo *(see D.3)*, reordering the newly formed S1 according to A.2 and restoring S2 to its original composition.

B.8 **Actions when no perfect candidate exists**

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 (C.5) or a quality criterion (C.6-C.21) 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 B.6 or B.7)*.

C Pairing Criteria

Absolute Criteria

No pairing shall violate the following absolute criteria:

C.1 see C.04.1.b *(Two players shall not play against each other more than once)*

C.2 see C.04.1.d *(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)*.

C.3 non-topscorers *(see A.7)* with the same absolute colour preference *(see A6.a)* shall not meet *(see C.04.1.f and C.04.1.g)*.

Completion Criterion

C.4 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.

PAB Criterion

C.5 minimize the score of the assignee of the pairing-allocated-bye.

Quality Criteria

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

C.6 minimize the number of downfloaters *(equivalent to: maximize the number of pairs)*.

C.7 minimize the PSD (*This basically means: maximize the number of paired MDP(s); and, as far as possible, pair the ones with the highest scores*).

C.8 choose the set of downfloaters so that in the following bracket every criterion from C.1 to C.7 is complied with.

C.9 minimize the number of unplayed games of the assignee of the pairing-allocated-bye.

C.10 minimize the number of topscorers or topscorers' opponents who get a colour difference higher than +2 or lower than -2.

C.11 minimize the number of topscorers or topscorers' opponents who get the same colour three times in a row.

C.12 minimize the number of players who do not get their colour preference.

C.13 minimize the number of players who do not get their strong colour preference.

C.14 minimize the number of players who receive the same downfloat as the previous round.

C.15 minimize the number of players who receive the same upfloat as the previous round.

C.16 minimize the number of players who receive the same downfloat as two rounds before.

C.17 minimize the number of players who receive the same upfloat as two rounds before.

C.18 minimize the score differences of players who receive the same downfloat as the previous round.

C.19 minimize the score differences of players who receive the same upfloat as the previous round.

C.20 minimize the score differences of players who receive the same downfloat as two rounds before.

C.21 minimize the score differences of players who receive the same upfloat as two rounds before.

D **Rules for the sequential generation of the pairings**

Before any transposition or exchange take place, all players in the bracket shall be tagged with consecutive in-bracket sequence-numbers (BSN for short) representing their respective ranking order (according to A.2) in the bracket *(i.e. 1, 2, 3, 4, ...)*.

D.1 **Transpositions in S2**

A transposition is a change in the order of the BSNs *(all representing resident players)* in S2.

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))*.

D.2 **Exchanges in homogeneous brackets or remainders (original S1 ↔ original S2)**

An exchange in a homogeneous brackets (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.

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)*.

The priority goes to the exchange having:

a the smallest number of exchanged BSN(s) *(e.g. exchanging just one BSN is better than exchanging two of them)*.

b 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)*.

c 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)*.

d 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)*.

D.3 Exchanges in heterogeneous brackets (original S1 ↔ original Limbo)

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.

In order to sort all the possible MDP-exchanges, apply the following <u>comparison rules between two MDP-exchanges</u> 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.

The priority goes to the exchange that yields a S1 having:

a the highest different score among the players represented by their BSN *(this comes automatically in complying with the C.7 criterion, which says to minimize the PSD of a bracket)*.

b the lowest lexicographic value of the BSN(s) (sorted in ascending order).

Any time a sorting has been established, any application of the corresponding D.1, D.2 or D.3 rule, will pick the next element in the sorting order.

E Colour Allocation rules

Initial-colour

It is the colour determined by drawing of lots before the pairing of the first round.

For each pair apply (with descending priority):

E.1 Grant both colour preferences.

E.2 Grant the stronger colour preference. If both are absolute (topscorers, see A.7) grant the wider colour difference (see A.6).

E.3 Taking into account C.04.2.D.5, alternate the colours to the most recent time in which one player had white and the other black.

E.4 Grant the colour preference of the higher ranked player.

E.5 If the higher ranked player has an odd pairing number, give him the initial-colour; otherwise give him the opposite colour.

> *Note: Always consider sections C.04.2.B/C (Initial Order/Late Entries) for the proper management of the pairing numbers.*

TABLE OF CHANGES

(not reported are simple changes to article references, created by the introduction of new articles)

C.04.1 – BASIC RULES FOR SWISS SYSTEMS
C.04.3 – FIDE (DUTCH) SYSTEM

Art.	~~REMOVED TEXT~~ / NEW TEXT	Reason
C.04.1 – BASIC RULES FOR SWISS SYSTEMS		
1.d	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 ~~(forfeit)~~ win ~~due to an opponent not appearing in time~~, shall not receive the pairing-allocated bye.	*This makes the full-point bye equivalent to a forfeit win: a player who gets a full-point bye is prevented from getting a pairing-allocated bye.*
C.04.3 – FIDE (DUTCH) SYSTEM		
	Version to be presented at the 94ʳᵈ FIDE Online Congress in 2023 ~~approved at the 87th FIDE Congress in Baku 2016~~. **Terms and Definitions** ~~and Pairing Guidelines For Programmers~~ added at the 88ᵗʰ FIDE Congress in Goynuk 2017. See *https://spp.fide.com/fide-dutch-extras/*.	*The new part will be replaced after approval.* <u>Pairing Guidelines For Programmers</u> *are to be reviewed after the changes.*
A.3	A scoregroup is ~~normally~~ composed of (all) the players with the same score. ~~The only exception is the special "collapsed" scoregroup defined in A.9.~~ A (pairing) bracket is a group of players to be paired. It is composed of players coming from ~~one same~~a non-empty scoregroup (called resident players) and (possibly) of players who remained unpaired after the pairing of the previous bracket.	*As a consequence of the simplification of the pairing process, the special "collapsed" scoregroup has been removed from the system.* *Same wording as in the more recently redefined Burstein System, except for the "non-empty" attribute, which is a clarification.*
A.4.b	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. A player who, for whatever reason, ~~does not play~~ scores without playing in a round more points than those rewarded for a loss, also receives a downfloat	*The main reason for considering players who forfeited or had a zero-point bye to be downfloaters was to prevent them from getting a pairing-allocated bye after already missing a game.* *Now, the new C.9 criterion prevents this from happening.*
A.8 (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 ~~brackets~~ scoregroups that may follow the current one.*	*The mention of "brackets" was incorrect: a bracket is statically followed by scoregroups.*

A.9	**Round-Pairing Outlook**	*The first sentence has been moved to reflect the wording of the recently redefined Burstein System. The same goes for the added parenthetic clause at the end.*
	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 C.1-C.3 have been complied with.	*The removed parts are a consequence of the simplification of the pairing process.*
	~~If it is impossible to complete a round-pairing, the arbiter shall decide what to do. Otherwise, t~~ 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.	
	If it is impossible to complete a round-pairing, the arbiter shall decide what to do.	
	~~However, if, during this process, the downfloaters (possibly none) produced by the bracket just paired, together with all the remaining players, do not allow the completion of the round-pairing, a different processing route is followed. The last paired bracket is called Penultimate Pairing Bracket (PPB). The score of its resident players is called the "collapsing" score. All the players with a score lower than the collapsing score constitute the special "collapsed" scoregroup mentioned in A.3.~~	
	~~The pairing process resumes with the re-pairing of the PPB. Its downfloaters, together with the players of the collapsed scoregroup, constitute the Collapsed Last Bracket (CLB), the pairing of which will complete the round-pairing.~~	
	Section B describes the pairing process of a single bracket.	
	Section C describes all the criteria that the pairing of a bracket has to satisfy (in order of priority).	
	Section E describes the colour allocation rules that determine which players will play with ~~w~~White.	
B.4	**Evaluation of the candidate**	*See the new C.5 (PAB Criterion) -not a strict quality criterion defined in its own section- and the new C.9, which explain the new wording and references.*
	If the candidate built as shown in B.3 complies with all ~~the absolute and completion~~ criteria (~~from C.1 to C.~~5~~4~~), and all the quality criteria from C.6~~5~~ to C.21~~19~~ are fulfilled, the candidate is called "perfect" and is (immediately) accepted. Otherwise, apply B.5 in order to find a perfect candidate; or, if no such candidate exists, apply B.8.	
B.8	**Actions when no perfect candidate exists**	
	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 (C.5) or a quality criterion (C.6~~5~~-C.21~~19~~) 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 B.6 or B.7)*.	
C.4	~~if the current bracket is the PPB (see A.9): choose the set of~~ after the bracket has been paired, its downfloaters, together with the players from all the remaining scoregroups, shall allow the completion of ~~in order to complete~~ the round-pairing.	*The first clause was removed as a consequence of the simplification of the pairing process.*
		The wording has then been adjusted to clarify the goal of the Completion Criterion.
C.5	**PAB Criterion**	*New criterion, introduced to ensure that the pairing-allocated bye always goes to somebody with the lowest possible score (as happens in the other pairing systems).*
	minimize the score of the assignee of the pairing-allocated-bye.	
C.6	minimize the number of downfloaters *(equivalent to: maximize the number of pairs)*.	*The text of the criterion and the note have been reversed to have all "minimize"(s) in the criteria.*
C.8	~~if the current bracket is neither the PPB nor the CLB (see A.9):~~ choose the set of downfloaters so that ~~in order first to maximize the number of pairs and then to minimize the PSD (see C.5 and C.6)~~ in the following bracket ~~(just in the following bracket)~~ every criterion from C.1 to C.7 is complied with.	*The first clause has been removed as a consequence of the simplification of the pairing process.*
		The rest is a more synthetic version of the same criterion from the Burstein System.
C.9	minimize the number of unplayed games of the assignee of the pairing-allocated-bye.	*New criterion to align the pairing-allocated bye assignment with what is done in other systems.*

PLAY-OFF AND TIE-BREAK REGULATIONS

Approved by <mark>FIDE Council</mark> on <mark>01/08/2023</mark>

Applied from 1st September, 2023 for all FIDE competitions under the aegis of EVE and GSC; from 1st April, 2024 for all FIDE-rated competitions.

1. **Scope**

   These regulations shall apply to all FIDE-rated competitions.

   - *Note: See article 4.1.*

2. **Ranking of Tied Participants (Players or Teams)**

   2.1   The regulations of the tournament shall specify whether tied participants will share the same place in the standings or, if not, a method for ranking them.

   2.2   The available methods of ranking tied participants are:

   - Over-the-Board play-offs (see Article 3)

   - Off-the-Board tie-breaks (see Article 4 onwards)

3. **Play-offs**

   3.1   If play-offs are required, the following parameters shall be set out in the specific tournament regulations, as needed:

   3.1.1   Whether play-offs are for all tied positions, or specific tied positions (e.g. 1st place only)

   3.1.2   Whether qualification for play-offs applies after application of none, some or all of the tie-breaks selected in Article 4.1.

   3.1.3   The format (e.g. Round Robin or Knockout)

   3.1.4   The method by which pairing numbers are allocated

   3.1.5   The method by which colours are allocated

   3.1.6   The time limit(s) for all of the games

   3.1.7   The schedule for the games, or the break between each game

4. **Tie-Breaks**

   4.1   They shall take the form of an ordered list of tie-breaks chosen by the Chief Organiser either among those listed in Article 5, or self-defined in the specific regulations of the tournament.

If necessary, the Chief Arbiter shall complete the list by choosing additional tie-breaks from those listed in Article 5, and publish the list before the start of the tournament.

4.2 For the final tournament standings, participants shall be ranked in the order specified by the respective tie-break, starting from the first specified tie-break and moving to the next in the list whenever a persisting tie cannot be broken. When the tie-break list is exhausted, any remaining tie should be broken by drawing of lots, unless the rules of the tournament specify that such ties will not be broken.

4.3 These tie-breaks calculate an evaluation which may be based on:

Type A a subset of the games by the tied participants.

   Tie-Breaks of this type may appear multiple times in the tie-break list.

Type B participants' own results, so their value can be calculated or predicted by the involved participants before or during their own games

Type C opponents' (final) results, so they can be calculated only at the end of the round or tournament.

Type D opponents' prior known data (e.g. ratings, but also results of previous rounds), so their values can be calculated after the pairings are published (i.e. before the games are played)

or some combination of all the above.

4.4 If two participants play each other more than once, each game or match will be treated as a separate encounter (except as provided in Article 6.1.2). Consequently, the data of the opponents (e.g. ratings, scores) will be used in sums and averages as many times as the two participants played each other.

5. Tie-Breaks List and Description

Name (in alphabetical order)	Type	Section	Acronym	Cut-1
Average of Opponents' Buchholz	CC	8.2	AOB	
Average Perfect [Tournament] Performance of Opponents	DC	10.5	APPO	
Average [Tournament] Performance Rating of Opponents	DC	10.4	APRO	
Average Rating of Opponents	D	10.1	ARO	●
Buchholz	C	8.1	BH	●
Direct Encounter	A	6	DE	
Fore Buchholz	D	8.3	FB	●
Games one Elected to Play	B	7.6	GE	
Koya System for Round Robin	BC	9.2	KS	
Number of Games Played with Black	B	7.3	BPG	
Number of Games Won	B	7.2	WON	
Number of Games Won with Black	B	7.4	BWG	

Number of Wins	B	7.1	WIN	
Perfect Tournament Performance	DB	10.3	PTP	
Sonneborn-Berger	BC	9.1	SB	●
(Sum of) Progressive Scores	B	7.5	PS	●
Tournament Performance Rating	DB	10.2	TPR	
Tie-Breaks specific for Team Knock-Outs				
Board Count	B	12.1	BC	
Bottom Board Elimination	B	12.3	BBE	
Top Board Results	B	12.2	TBR	
Tie-Breaks specific for Team Competitions				
Extended Sonneborn-Berger for teams	BC	13.2	ESB	●
Extended Direct Encounter for teams	A	13.3	EDE	
Match Points or Game Points	B	13.1	MPvGP	
Scores and Schedule Strength Combination	BC/BD	13.4	SSSC	

6. Direct Encounter (DE) (Type A, i.e. multi-listable)

6.1 If some or all the tied participants have met each other, the sum of the scores from these encounters is used to produce separate standings, with the following caveats:

6.1.1 forfeit wins or losses not covered by Article 15.2 are excluded unless the specific regulations of the tournament state otherwise - when included, forfeit wins or losses are equivalent to games played

6.1.2 contrary to the provisions of Article 4.4, if two participants have met more than once, the addend to be used by them in the aforementioned sum is the average score of these games.

6.2 If all the tied participants have met each other, the separate standings determine all rankings among them, except for any further ties among any subset of them, for which Article 6 shall be reapplied until no further ties can be resolved.

6.3 In Swiss tournaments, if the tied participants have not played all the games against each other, but one of them will be alone at the top of the separate standings whatever the outcome of the missing games, that participant is ranked first among the tied participants – the same applies to the second rank when the first is assigned this way; and so on.

Article 6 shall then be reapplied to all remaining unranked participants of this set.

7. Type B Tie-Breaks (based on Participant's own Record)

7.1 Number of Wins (WIN)

The number of rounds where a participant obtains, with or without playing, as many points as awarded for a win.

7.2 Number of Games Won (WON)

The number of games won over the board.

7.3 Number of Games Played with Black (BPG)

The number of games played over the board with the black pieces.

7.4 Number of Games won with Black (BWG)

The number of games won over the board with the black pieces.

7.5 (Sum of) Progressive Scores (PS)

After each round a participant has a certain tournament score. This tie-break is calculated adding the score of the participant at the end of each round.

7.6 Games one Elected to play (GE)

The number of rounds reduced by the number of half-point-byes, zero-point-byes or forfeit losses that a participant had in the tournament.

8. Buchholz and other Tie-Breaks related to Buchholz

8.1 Buchholz (BH)

The sum of the scores of each of the opponents of a participant.

8.2 Average of Opponents' Buchholz (AOB)

The average of the Buchholz score of the opponents played over the board.

8.3 Fore Buchholz (FB)

Buchholz score calculated as if all paired games for the final round had ended in draws.

See Article 16 for Unplayed Rounds Management.

9. Tie-Breaks based on both participant's and opponents' results

9.1 Sonneborn-Berger (SB)

It is calculated by adding, for each round, a value given by multiplying the final score of the opponents by the points scored against them. See Article 16 for Unplayed Rounds Management.

9.2 Koya System (for Round Robin) (KS)

The number of points achieved against all participants who have scored at least 50% of the maximum possible tournament score.

10. Ratings-based Tie-Breaks

These tie-breaks must be dropped from the tournament tie-break list when unrated players are present, unless detailed rules on the handling of unrated players are included in the tournament regulations or established and published by the Chief Arbiter before the start of the tournament.

10.1 Average Rating of Opponents (ARO)

The average of the ratings of the opponents played over the board, rounded to the nearest whole number (0.5 rounded up).

10.2 Tournament Performance Rating (TPR)

Calculated adding to ARO a number (called rating difference (RD) - which may be negative) resulting from the conversion of the fractional score (number of points achieved in games played over the board divided by the number of games) into RD (see the corresponding conversion table in the FIDE Rating Regulations).

10.3 Perfect Tournament Performance (PTP)

This is a whole number corresponding to the lowest rating that a participant should have for their expected score to be greater than or equal to their tournament score. For a zero score, this number is set 800 points lower than the rating of the lowest rated opponent.

The expected score is the sum of the scoring probabilities which are defined in the FIDE Rating Regulations by the conversion table of rating differences into scoring probabilities.

Each rating difference is calculated by using the aforementioned lowest rating and the rating of each opponent faced by the participant during the tournament. The full rating scale is used in this conversion (i.e. no ±400 cut).

10.4 Average [Tournament] Performance Rating of Opponents (APRO)

The average of the performances (TPR) of the opponents played over the board, rounded to the nearest whole number (0.5 rounded up).

10.5 Average Perfect [Tournament] Performance of Opponents (APPO)

The average of the perfect performances (PTP) of the opponents played over the board, rounded to the nearest whole number (0.5 rounded up).

11. Team Tie-Breaks

11.1 In team tournaments each match between two teams may report two types of scores:

11.1.1 Match Points (MP)

Points assigned to a team-win, team-draw, and team-loss.

11.1.2 Game Points (GP)

Sum of the individual points that each player of the team scores.

12. **Tie-Breaks Specific for Team Knockouts**

Even though these tie-breaks may be used in team competitions (see Article 13), and are described as such, they are specific for team knockouts when both teams have the same number of match points and game points.

For these tie-breaks:

- individual forfeit wins or losses are considered as standard wins or losses
- if the team received a pairing-allocated bye, the game points considered for each board are the same as those assigned to a standard win.

12.1 **Board Count (BC)**

For each team and each board, multiply the board number (e.g. one for first board, two for second board) by the number of game points achieved on that board in all games played by the team in the tournament, regardless of who was playing on it.

The lower the sum of these products, the higher the ranking of the team.

It can only be used when all tied teams have (scored) the same number of game points.

12.2 **Top Board Results (TBR)**

This is the number of game points achieved on the first board in all games played by the team in the tournament, regardless of who was playing on that board.

If the results on the top board are not decisive, reapply this tie-break to the top-most board not yet counted. Continue reapplying this tie-break in the same way until the tie is broken.

12.3 **Bottom Board Elimination (BBE)**

This is the number of game points achieved on all boards except for the bottom board in all games played by the team in the tournament, regardless of who was playing on those boards.

If excluding the bottom board is not decisive, reapply this tie-break to the bottom-most board not yet excluded. Continue reapplying this tie-break in the same way until the tie is broken.

13. **Tie-Breaks Specific for Team Competitions**

All tie-breaks described in Articles 6-10, or some variation of them, may be also applied for teams, using teams MP or GP as the reference score for the team – the primary score being the default, if the reference score is not explicitly indicated.

13.1 **Match Points or Game Points (MPvGP)**

Match Points in team competitions that are decided by Game Points or Game Points in team competitions that are decided by Match Points.

13.2 **Extended Sonneborn Berger (ESB) for Teams**

Combining MP and GP, four combinations of Sonneborn-Berger tiebreaks are available. Any of them or any combinations of them can be used. Each (Extended) Sonneborn-Berger tie-break is calculated adding for each opponent a value given by the product of two elements:

- the total number of MP or GP achieved by the opponent at the end of the tournament;
- the number of MP or GP scored against that opponent.

The four possibilities are:

13.2.1   EMMSB   Total MP opponent × MP scored

13.2.2   EMGSB   Total MP opponent × GP scored

13.2.3   EGMSB   Total GP opponent × MP scored

13.2.4   EGGSB   Total GP opponent × GP scored

See Article 16 for Unplayed Rounds Management.

13.3   Extended Direct Encounter for Teams (EDE)

13.3.1   Apply the Direct Encounter rule (Article 6), first using the primary score (MP or GP), then, if all the teams are still tied, using the secondary score.

13.3.2   If exactly two teams are still tied in both MP and GP, the rules of a competition must specify whether the Tie-Breaks specific for Team Knockouts apply (Article 12), and, if so, which ones and in what order.

13.3.3   Any time a new subset of tied teams is determined, restart with the new subset from 13.3.1.

13.4   Scores and Schedule Strength Combination (SSSC)

This tie-break adds together two elements:

13.4.1   the secondary score of a team (GP if the primary score is given by MP, or vice versa);

13.4.2   a value that represents the strength of its opposition (called Schedule Strength). This value is the result of a division between:

   a)   [dividend] Buchholz of the team, based on the primary score (note: if the tie-break value must be known before playing, use Fore Buchholz);
   b)   [divisor] a normalising factor, given by the highest achievable primary score in the tournament divided by the highest secondary score achievable in a single match, rounded to the nearest integer towards zero, or by a different value if stated by the rules of the competition.

14.   Modifiers

Each tie-break based on a sum of values (that can come from either results, ratings or any value calculated using them) can be redefined by applying a modifier, which is a

way to vary the elements that are part of the calculation, usually excluding some of these elements or, more rarely, adding some:

14.1 Cut-1: Cut the Least Significant Value

14.1.1 It is the most used modifier, applicable in many tie-breaks. The most commonly used are:

a) Buchholz Cut-1 (BH-C1, exclude the opponent with the lowest number of points)

b) ARO Cut-1 (ARO-C1, exclude the opponent with the lowest rating)

c) Progressive Score Cut-1 (PS-C1, exclude the score achieved after the first round)

d) Sonneborn-Berger Cut-1 (SB-C1, exclude the opponent with the lowest score - if more than one, exclude the one with which the worst result was achieved).

14.1.2 In team competition, all the Extended Sonneborn-Berger tie-breaks for teams (see Article 13.2) are calculated excluding one of the opponents with the lowest primary score (MP for EMMSB and EMGSB, or GP for EGMSB and EGGSB) - having the choice the one with which the worst result was achieved.

14.2 Cut-2: Cut the two Least Significant Values

Most commonly used is Buchholz Cut-2 (BH-C2).

14.3 Median1: Cut the Least and the Most Significant Values *(in that order)*

Most commonly used is Buchholz Median-1 (BH-M1).

14.4 Median2: Cut the two Least and the two Most Significant Values *(in that order)*

Most commonly used is Buchholz Median-2 (BH-M2).

14.5 Limit: Change a Limit

The most common modification is in Koya: the limit of 50% of the maximum possible tournament score can be either increased or decreased of half point at a time to let respectively less or more participants contribute to the evaluation of the tie-break.

14.6 All modifiers are subject to Unplayed Rounds Management (see Article 16).

15. Unplayed Rounds

15.1 An unplayed round is any round in which a participant, paired or not, did not play a game in an individual tournament, or a match in a team tournament

15.2 In tournaments with pre-determined pairings, forfeit wins or losses (the only possible unplayed rounds) are treated as regular games.

15.3 For Swiss tournaments, apply Article 16.

16. Unplayed Rounds Management in Swiss Tournaments

In Individual or Team Swiss tournaments, the tie-breaks Buchholz (see Article 8.1), Sonneborn-Berger (see Articles 9.1 and 13.2) and their variants (Fore Buchholz, see Article 8.3; and "Cut" Modifiers, see Articles 14.1 to 14.4), which are directly or indirectly based on opponents' results, are affected by the presence of unplayed rounds in the record of participants.

16.1 The following definitions are used in this section:

16.1.1 requested bye: a half-point-bye or a zero-point-bye (note: any round after a participant withdraws is a zero-point-bye)

16.1.2 available-to-play round: any round in which a participant played their game, or ended up without a game due to a pairing-allocated bye, the opponent did not arrive to play, or unforeseen circumstances that resulted in the award of a full-point-bye

16.2 Unplayed rounds can be divided into the following categories:

16.2.1 Pairing-allocated byes or full-point byes

16.2.2 Forfeit wins

16.2.3 Requested byes that are followed by at least one available-to-play round

16.2.4 Forfeit losses

16.2.5 Requested byes that are not followed by any available-to-play rounds

16.3 When a participant has unplayed rounds, for the sole purpose of calculating the tie-break of their opponents, the participant's score is adjusted in the following way:

16.3.1 Unplayed rounds of categories 16.2.1, 16.2.2, 16.2.3 and 16.2.4 are evaluated with the result (win, draw, loss) corresponding to the awarded number of points or, for teams, match points and game points.

16.3.2 Unplayed rounds of category 16.2.5 are evaluated as draws.

16.4 To calculate the participant's own tie-break, any of their unplayed rounds are evaluated as if there was a game played against a dummy that concluded the tournament with the same number of points as the participant themself, and ended with the result (win, draw, loss) corresponding to the awarded number of points.

Note: For team competitions, "points" means "match points and game points".

16.5 **Cut-1 Exception**

A voluntary unplayed round ("VUR") is a requested bye or a forfeit loss (16.2.3 to 16.2.5).

16.5.1 When a modifier calls for cutting the least significant value (see Articles 14.1 to 14.4) of a participant with one or more VURs, the lowest contribution coming from such rounds shall be cut, as long as such contribution is not lower than the least significant value.

This means:

- *For Buchholz, cut the lowest contribution coming from a VUR.*
- *For Sonneborn-Berger, after determining:*
    a) *the lowest contribution coming from a VUR*
    b) *the least significant value (see 14.1.1.d and 14.1.2)*
    cut the higher of these two values (note: they are the same element if the least significant value comes from a VUR).

16.5.2   Rule 16.5.1 applies again to the remaining elements when the modifier requires more cuts (see Articles 14.2 and 14.4).

16.6   The rules of the competition may specify in advance alternative provisions to Articles 16.3, 16.4 or 16.5.

TABLE OF CHANGES

Art.	REMOVED TEXT / NEW TEXT	Reason
4.2	For the final tournament standings, participants shall be ranked in the order specified by the respective tie-break, starting from the first specified tie-break and moving to the next in the list whenever a persisting tie cannot be broken. When the tie-break list is exhausted, any remaining tie should be broken by drawing of lots, unless the rules of the tournament specify that such ties will not be broken.	*The way the rules are written now, it would be impossible for two people to share the same position in the standings after exhausting the tie-break list.*
6.1.1	~~forfeited games~~ forfeit wins or losses not covered by Article 15.2 are excluded unless the specific regulations of the tournament state otherwise - when included, ~~forfeited games~~ forfeit wins or losses are ~~equivalent to~~ treated as games played.	*"forfeited games" could be misinterpreted.* *The other changes are for consistency between 6.1.1 and 15.2.*
15.2	In tournaments with pre-determined pairings, ~~forfeited games~~ forfeit wins or losses (the only possible unplayed rounds) are treated as ~~regular~~ games played.	
10.3	This is a whole number corresponding to the lowest rating that a participant should have for their expected score to be greater than or equal to their tournament score. For a zero score, this number is set 800 points lower than the rating of the lowest rated opponent.	*This is a rule change.* *With the previous text, with a zero score, the returned value was the lowest possible whole number (i.e., 0). The new returned value is slightly more accurate.*
12	Even though these tie-breaks may be used in team competitions (see Article 13), and are described as such, they are specific for team knockouts when both teams have the same number of match points and game points. ~~Just f~~For these tie-breaks: • individual forfeit wins or losses are considered as standard wins or losses • if the team received a pairing-allocated bye, the game points considered for each board are the same as those assigned to a standard win.	*"Just" was unnecessary and could be confusing as individual forfeit wins or losses are also considered standard wins or losses in other situations.*
12.1	**Board Count (BC)** ~~It is calculated by adding f~~For each team and each board, ~~a value given by~~ multiply~~ing the number of game points scored on that board (regardless of who was playing on it)~~ by the number of the board (e.g. one for first board, two for second board) by the number of game points achieved on that board in all games played by the team in the tournament, regardless of who was playing on that board. The lower the ~~total~~ sum of these products, the higher the ranking of the team. It can only be used when all tied teams have (scored) the same number of game points.	*Simplification and clarification of the previous text.* *Other changes to improve the consistency with 12.2.*
13.4.2	a value that represents the strength of its opposition (called Schedule Strength). This value is the result of a division between: a) [dividend] Buchholz of the team, based on the primary score (note: if the tie-break value must be known before playing, use Fore Buchholz); b) [divisor] a normalising factor, given by the highest achievable primary score in the tournament divided by the highest secondary score achievable in a single ~~game~~ match, rounded to the nearest integer towards zero, or by a different value if stated by the rules of the competition.	*"in the tournament" added to improve accuracy.* *Since this tie-break is for a team competition, the term "match" must be used.*
16.4	To calculate the participant's own tie-break, any of their unplayed rounds are evaluated as if there was a game played against a dummy that ~~has~~ concluded the tournament with the same number of points as the participant themself, and ended with the result (win, draw, loss) corresponding to the awarded number of points.	*Some were interpreting the old text as "at the moment of the game" (reminiscent of the old virtual opponent)*

16.5	**Cut-1 Exception**
	A voluntary unplayed round ("VUR") is a requested bye or a forfeit loss (16.2.3 to 16.2.5).
	16.5.1 When a modifier ~~is used that~~ calls for cutting the least significant value (see Articles 14.1 to 14.4)~~, the tie-break score for~~ of a participant with one or more VURs, ~~that has forfeit losses or requested byes among their unplayed rounds is instead calculated by cutting~~ the lowest contribution coming from ~~unplayed~~ such rounds shall be cut ~~of this kind~~, as long as such contribution is not lower than the least significant value~~ - if it is lower, there is no exception: the least significant value is cut (see Article 14.1)~~.
	That means:
	• *For Buchholz, cut the lowest contribution coming from a VUR*
	• *For Sonneborn-Berger, after determining:*
	   (a) *the lowest contribution coming from a VUR*
	   (b) *the least significant value (see 14.1.1.d and 14.1.2)*
	 cut the higher of these two values (note: they are the same element if the least significant value comes from a VUR)
	16.5.2 Rule 16.5.1 applies again to the remaining elements when the modifier requires more cuts (see Articles 14.2 and 14.4).
		The article has been rewritten to clarify that: *(a) it is an exception* *(b) if there are multiple low cuts, the same rule applies to the remaining elements.* *In addition, the acronym VUR is defined and used throughout the article.* *The article ends with a practical description of its application to Buchholz and Sonneborn-Berger.*

Annex C.07 Table-Of-Changes

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Swiss Team Pairing System

Preface:

The Swiss Pairing System Rules specified in sections C.04.1, C.04.2.A, C.04.2.C, C.04.2.D are for individuals, but can also be applied mutatis mutandis to teams, with one significant exception: C.04.1.f/C.04.1.g never apply.

In fact, for teams, the colours are less important. This is mainly because individuals in a team can be substituted or shifted between the various boards, and because teams are often composed of an even number of players, resulting in each team having an equal number of players playing with White and Black. That's why the rules presented here display various lower-strength colour preferences than those described in the individual rules, and of different varieties, to facilitate various forms of team competitions. There may be competitions where colours have no importance at all (for instance because each individual plays one game with White and one with Black); others where having a particular colour is not a decisive factor (for instance, because teams have an even number of players and all teams play in the same geographical place); and other competitions, where the colour is more meaningful (for instance, because the composition of the teams cannot be changed, or teams have an odd-number of players, or having a particular colour may mean a home or a road match). In any case, the colour will never be a factor so decisive as to prevent two teams from playing against each other. Therefore, there are no absolute colour preferences outlined in these regulations.

The section C.04.2. B (Initial Order) has been deliberately omitted from the initial list shown above because there are too many variants to take into account to define an appropriate strength for teams, such as only using starters' ratings, including reserves, counting a fixed number of highest ratings, managing unrated players, and so on. In the end, it's preferable to leave any details out of the general rules and let the initial order of teams be determined by the rules of each specific competition.

A. Introductory Remarks and Definitions

A.1 Tournament Pairing Number ("TPN")

Each team must have a different TPN, from 1 to the TPN corresponding to the last team. The rules of the team competition shall describe how to assign a TPN to each team. Otherwise, it is a decision of the arbiter.

> *Note: This provision overrides the rules of section C.04.2.B*

Once defined, the TPN should not be modified (except as stated in section C.04.2.C), unless the arbiter decides otherwise.

A.2 Score

The rules of the competition shall state which, between "match-points" and "game-points", is called "primary score" (or, simpler, "score"), and whether the other ("secondary score") is used, and if so, for what. The default is to use "match-points" as the (primary) score and "game-points" only for colour allocation (see Section E).

A.3 Scoregroups and pairing brackets

A scoregroup is composed of all the teams with the same score.

A (pairing) bracket is an even numbered group of teams all to be paired. It is composed of teams coming from the same scoregroup (called resident teams) and (possibly) of teams coming from lower scoregroups (called upfloaters).

A.4 Byes

Should the number of teams to be paired be odd, one team is unpaired. This team receives a pairing-allocated-bye: no opponent, no colour, and as many match-points and game-points as are rewarded for a draw, unless the regulation of the team competition state otherwise.

A.5 Floaters

A team is said to float when plays against an opponent with a different primary score, or doesn't play at all.

A.6 Colour difference (CD)

A team is said to have (had) a colour (White or Black) in a match if the match was actually played and the player on the first board was scheduled to play with that colour.

The colour difference of a team is the number of matches where the team had White minus the number of matches where the team had Black.

A.7 Colour preferences

Type A colour preferences are used unless the rules of the team competition specify that either Type B colour preferences shall be used or colour preferences are not to be used at all.

A.7.1 Type A colour preferences

a.   A team has a simple (Type A) colour preference for White if its CD is less than -1, or, being its CD 0 or -1, the team had Black in the last two played matches.

A team has a simple (Type A) colour preference for Black if its CD is more than +1, or, being its CD 0 or +1, the team had White in the last two played matches.

b.   In all other situations, the team has no (Type A) colour preference.

A.7.2 Type B colour preferences

a.   A team has a strong (Type B) colour preference for White if its CD is less than -1, or, being its CD 0 or -1, the team had Black in the last two played matches.

A team has a strong (Type B) colour preference for Black if its CD is more than +1, or, being its CD 0 or +1, the team had White in the last two played matches.

b.   A team has a mild (Type B) colour preference for White if its CD is -1, or, if it is zero and it is not the last round, the team had Black in the last played match.

A team has a mild (Type B) colour preference for Black if its CD is +1, or, if it is zero and it is not the last round, the team had White in the last played match.

c.   A team has no (Type B) colour preference when it has yet to play a match, or when its CD is zero when pairing for the last round.

A.8   Top-Scoregroup

During the pairing, it is the group of one or more teams that have the highest score among the teams that are yet to be paired.

A.9   Round-Pairing Outlook

a.   The pairing of a round (called round-pairing) is complete if all the teams (except at most one, which receives the pairing-allocated bye) have been paired, and the absolute criteria C.1-C.2 have been complied with.

b.   The first step in the pairing process is the assignment of the pairing-allocated-bye (if needed) by applying rule B.0.

Then, the top-scoregroup (see A.8) is combined, when needed, with a set of upfloaters (selected according to rule B.1), to form a bracket that is paired according to rule B.2.

The above step is then repeated until the round-pairing is complete.

Colours are then assigned according to rules E.0-E.6.

c.   If it is impossible to complete a round-pairing, the arbiter shall decide what to do.

Section B describes the pairing rules.

Section C defines all the criteria that the pairing rules have to satisfy (in order of priority).

Section E defines the colour allocation rules that determine which teams will play with White.

B.   Pairing Rules

A pairing is legal when the absolute criteria (C.1 and C.2) and, where applicable, the completion criterion (C.3) are complied with.

B.0   Pairing-Allocated-Bye assignment

The pairing-allocated-bye is assigned to the team that:

a.   leaves a legal pairing for all the teams

b.   has the lowest score

c.   has played the highest number of matches

d.   has the highest TPN

B.1   Selection of upfloaters for the top-scoregroup

a.   All teams with a lower score than the resident teams of the top-scoregroup *(see A.8)* are potential upfloaters.

b. Consider all sets of potential upfloaters that comply with C.4 and C.5.

   Note: This somehow determines the number of upfloaters in the set and their scores.

   In each of these sets, the potential upfloaters, identified by their TPN, are first sorted by score (from highest to lowest) and, when scores are equal, by TPN (from lowest to highest).

   These sets are then sorted among themselves by the lexicographic order of their TPNs.

c. Choose the first set that, together with the top-scoregroup *(see A.8)*, produces a legal pairing that also complies with criterion C.6 *(besides C.4 and C.5, which it complies with by construction)*.

B.2   Pairing of a bracket

a. A pairing is a sequence of pairs that includes all teams in the bracket.

   For each pair, the team with the lower TPN is the top member of the pair; the team with the higher TPN is the bottom member of the pair.

b. A pairing is identified by the TPNs of the top members of each pair, sorted from lowest to highest, followed by the TPNs of the bottom member of the corresponding pair.

   Example   If 11-24 10-9 16-6 8-4 is a pairing, its identifying number is 4 6 9 11 8 16 10 24

c. Pairings are sorted by the lexicographic order of their identifiers.

d. Choose the first pairing that also complies with criteria C1, C.7, C.8 and C.9 *(besides the other criteria, which it complies with by construction)*.

C.   Pairing Criteria

Absolute Criteria

No pairing shall violate the following absolute criteria:

C.1   Two teams shall not play against each other more than once.

C.2   A team that has already received a pairing-allocated bye, or has already scored in one single round, without playing, the same score rewarded for a win, shall not receive the pairing-allocated bye.

Completion Criterion

C.3   choose the set of upfloaters (which may be empty) so that all the remaining teams outside the top-scoregroup allow the completion of the round-pairing.

Quality Criteria

In order to best pair all teams of the top-scoregroup (see A.8), comply as much as possible with the following criteria, given in descending priority:

C.4   minimize the number of upfloaters.

C.5   minimize the score differences in the pairs involving upfloaters, i.e. maximize the lowest score among the upfloaters (and then the second lowest, and so on).

C.6   choose the set of upfloaters in order to maximize the number of remaining teams that can be legally paired in the following scoregroup *(only in the following scoregroup, even though the upfloaters may come from lower scoregroups)*.

C.7   minimize the number of teams whose colour preference, if any, is not fulfilled.

C.8   *(Type B only)* minimize the number of teams whose strong colour preference, if any, is not fulfilled.

C.9   with the exception of the last two rounds, minimize the number of teams that float in consecutive rounds.

E.   Colour Allocation rules

Initial-colour

It is the colour determined by drawing of lots before the pairing of the first round.

First-team

In a pair, it is the team *(first that applies)*:

- with the higher primary score; or
- with the higher secondary score *(unless the rules of the competition state not to use it)*; or
- with the lower TPN.

For each pair apply (with descending priority):

E.0   When both teams have yet to play a match, if the first-team has an odd TPN, give it the initial-colour; otherwise give it the opposite colour.

> *Note: Always consider section C.04.2.C (Late Entries) for the proper management of the TPN.*

E.1   If only one team has a colour preference, grant it.

E.2   If the two teams have opposite colour preferences, grant them.

E.3   *(Type B only)* If only one team has a strong colour preference, grant it.

E.4   Give White to the team with the lower colour difference.

E.5   Taking into account C.04.2.D.5, alternate the colours to the most recent time in which one team had White and the other Black.

E.6   Grant the colour preference of the first-team.

JUSTICE in CHESS

FIDE

NEW Scoring Method (0, 0.25, 0.5, 0.75, 1)

AUTHOR & THEORIZER:

MAHMOOD KHORSHID

Dear Chairman of International Chess Federation (FIDE)

This is to submit my Innovative Refereeing Project on which I have worked for many years. This Innovative Refereeing Project which contains a five-scale domains of ranking (0,0.25,0.5 , 0.75,1) is capable of reforming and improving the current refereeing system . Also, this project has been planned to improve the fairness process and to better preserve the chess players' rights, especially when the superior chess players are defeated by their time. Fair score of 0.25 (according to the solution advised in book) will cause the satisfaction of both players. Consequently, it will cause more mental health of chess players and to some extent, may avoid useless scoring. In this new Innovative Refereeing Project, the score of time- defeat will be altered and decreased from 1 to 0.75 .Moreover, its powerful software is equipped with the frequent and special tie-break, which can manage and execute three methods of Innovative Refereeing Solution in chess competitions; they include: 1. referee judgment (+0.25 point) 2. Overtime (-0.25 point) 3. Consultative method (+0.25)

The pilot chess competitions have been hold in Khuzestan Province and the chess players have completely been satisfied with it.

I wish the International Chess Federation (FIDE) finds this Project applicable and approve it.

Best Regards
Khorshid

Arbitration proposal

From: Takis Nikopouos (Takisnik@yahoo.com)

Sent: Mondey'November 23' 2009 11:51:31 AM

To: Hadi Karimi (hadikarimi@hotmail.com)

To   Mr. Hadi Karimi

              Secretary General

              Iran Chess Federation

Dear Mr. Karimi,

Mr .khorshid's proposal regarding scoring and arbitration of chess Fderation sent to the FIDE Arbiter's Commission, was mentioned during the arbiters' Commission meeting of the 80th FIDE Congress, that was held in Halkidiki, Greece, from 11 to 18 October 2009.

The Commission had no objection to give Mr. Khorshid a time to explain his ideas, during the Arbiters'

With best regards

Panagiotis Nikolopoulos

Chairman

FIDE Arbiters' Commission

Domain arbitration System Innovative Plan including scores (0, 0.25, 0.5, 0.75, 1)

The innovative plan advantages will remove arbitration weaknesses and current administration flaws of chess races. In some cases, chess players face time shortage at the end of the race and despite winning opportunities they make persistent mistakes (as chess players put it; overlook) and are not able to keep on naturally and consequently lose the game.

This results in the players' mental despair and reflects negative effect even in the next competition.

On the other hand, chess player efforts will be in vein through the race and no score will be gained.

The innovative arbitration plan will give significance to the best creativities of the players all the way through the game and calculate the scores.

Administering the system requires software for running five respective domains: (1) gaining score 2) relative gaining score 0.75 (3) equal score 0.5 (4) relative losing score 0.25 (5) losing score 0

The software is developed and capable of being run in seven live languages of the world including Farsi, English, Spanish, German, French, and Italian and designed in form of specialized scoring.

Using the method, it is possible to have a broad race table and evaluate the champions and players with high accuracy.

One of the virtues and advantages of innovative umpiring plan in comparison with present umpiring are the issues and occasions of collusion and conniving that are performed by some of the high scorer players at the end of the competitions.

Because of the point breaking coefficient, 40% has been given to equal scores. This nasty has relatively been prevented.

Administration of justice

If 45 moved would have been made by Chess players and secure the winner position but their official time is to be ended weather in intentionally or unintentionally; after the end of the official time, the winning claimant players can regain their un-acquired right.

1- Referees idea with absolute and limited judgment refereed to article 10-2

2- Extra time that is used in the half- fast and intellectual games.

3- Players in consultation with the referees idea which will be held without conflict and is used in intellectual games and combination of extra time (four time) and referee's Judge.

1- Certified referees idea of absolute judgment and the scope of the arbitration Rating 0.75 and 0.25 and with their two average and strong judge.

The scores of 5 areas of the umpiring plan include:

0	0.25	0.50	0.75	1

In the point breaking coefficients software, the referee' average judge is as follows:

0	0.25	0.50	0.75	1

In the point breaking coefficients software, the referee' average judge is as follows:

0	0.35	0.40	0.65	1

Coefficient of black color is as below

0	0.015	0.02	0.03	0.04

2- Extra Time

It is allowed to winning- and or par-assertive players.

Almost, all sports worldwide have two or three spare time for instance football, wrestling, karate, basketball, volleyball, handball and the like, and arbitrators will score all the best of the players throughout the game sufficiently and accurately.

The only one sport with just one spare time is chess.

Having a timetable, it is possible to remove the game major problems, namely, to divide and approve the time of a chess game into two times; for example, the first one hour and half and the second ten minutes, or the first one hour and fifteen minutes and the second fifteen minutes.

So, winning in the second halftime will be scored 0.75 and equal 0.25.

This way of thinking and semi-rapid games with various times in two The two halves of the game (four times)

3- Two players in consultation with referee's idea

The referee appears in the scene and with his three different opinions gives one dictum to loss, second medium and common opinion to 0.25 score and 0.25 to point breaking is 0.35 score. Referee with consolation and satisfaction or two player calculate the scores.

1- If the referee declare as his opinion to loss or defeat, the player whose time is taken, can protest against the referee's opinion. In this case, the referee gives two equal times of 15 minutes or less to continue game position. If the player whose time is taken becomes winner or takes the further time of competitor, would receive (0.75point) and the competitor would receive (0.25) points. But if game ends in equal, the player whose time has been taken would receive (0.25) and the competitor would obtain 75 points. It is clear if the time taken player gets lost would receive 0 points/scores and the competitor would secure full point. (Four time's state and law)

2.- Now if the referee specifies the position of time taken player approximately positive or vague would announce .25 points for him. If the player doesn't have opposite expectation with the result would receive .75 scores. If he is not agree with such opinion the game will be played in the next round and within two short terms of equal times to continue position, will be done on the behalf of referee (four times state and law); the scores or points distribution will be as per previous position.

3. Referee's verbal opinion that has been calculated .35 breaking points to the full winning positions for the time taken player will be imposed as the referee opinion in the second part. It means, the waiting player in case of agreement with referee's opinion/vote will secure 0.75 points and score breaking will receive .65 points. If it opposes the referee's vote the game will be played in the extra time. (Four time's state and law) the loss or defeat scores will be implemented like previous parts.

This sympathy and viewpoints' exchange between players and referee cause judgment accuracy that has prevented scores wastage in the current arbitration pattern and the chess players' right will be less lost than a watch category and on the other hand the referees hold idea and opinion and they will not be the mere competition holders. This judgment trend would make grounds for competitions' improvement, efflorescence, judgment promotion, justice administration, spiritual soundness and the satisfaction of chess players.

It is better the competition is carried to extra time far from all doubts as per the programs announced before.

 In this case, scoring should be done based on the First method (Arbitration).

The way of performing and celebration of the competitions

For this purpose, the umpires at the beginning of the games should register their names in order to identify the pretender players whose time has come to end, to eliminate a part of their scores. Then, register the secured scores in the next stage on the basis umpiring plan calculation.

Refereeing Plan for 5 Districts that is invented by me:

Refereeing plan for 5 districts include point range 0-0.25-0.5-0.75-1 these scales and calculations are planned based on justice and rights of chess players will not be violated which finally satisfies chess players and chess will be more beautiful and attractive for them. The Following Rules & Regulations are Applied in Refereeing Respectively: 1- Value of 1 point of 0.25 black qualities is more than 1 point of 0.25 white qualities Black 0.25> 0.25 White

2- Value of 2 points of 0.25 black and white qualities is

more than 0.5 point 0.5 Point< 0.25 + 0.25 Points

3- Value of 2 points of 0.25 black qualities is more than value of 1 point of 0.25 black qualities and 1 point of 0.25 white qualities

Black 0.25 + White 0.25 < Black 0.25 + Black 0.25

4- Value of I point of 0.25 black qualities and value of 1 point of 0.25 white qualities is more than value of 2 points of 0,25 white qualities

White 0.25 + White 0.25 < Black 0.25 + White 0.25

5- Value of 3 points of 0.25 every color quality is more than value of

point of 0.75 time 0.75 < 0.25 + 0.25 + 0.25

6- Value of 1 point of 0.25 quality and 1 point of 0.5 is higher than 1 point

of 0.75 time 0.75<0.25+0.5

7- Value of 4 points of 0.25 of every color quality is

more than 1 point 1<0.25+0.25+0.25+0.25

8- Value of 2 points of 0.25 every color quality and one 0.5 point is

higher than 1 point l<0.25+0.25+0.5

Round effect: the value of point breaking of higher rounds scores is more than that of lower rounds.

Color Effect:

The value of breaking point is as below:

Score of black color is more than white color

The value of black beads for a scores 1 score to 0.04

And score 0.75 equal to 0.03

And score 0.5 equal and to 0.02

And score 0.25 of breaking point 0.35 equal to 0.015

And usual a score 0.25 equal to 0.01

It is not worthy that the software "Swiss Brilliant5" has a regulator and is able to change the number and values of color effect,

In regulation of the reference's judgment section, the breaking point number 0.025 is amended in extra time with 0.035 or vice versa constantly.

Current arbitration Plan versus Innovative Judgment Plan

Example:

If a hundred of people attend in a race, ten of whom will lose cause of losing the opportunities and rights time, and the result will be:

1→ 0.75 → 0.5 → 0.25 → 0

Meaning the score decreases from 1 to 0 and the statistic is defined and meaningful for the ten players.

And if the game is conducted with 7 moves:

The statistic of the 100-people game for 7 courses is:

Chessplayer10×4=40

Score distance

$40 \times 7 = 280$

Course

$280 \times 4 = 70$ useless scores of current arbitration plan

And if the race is conducted in more courses, current arbitration plan bias statistic will be higher and we face with more intensive mental problems of the players.

The shortcoming is obvious in current judgment plan of the chess.

Running innovative arbitration plan, based on the first solution and judges eyes for ten players, even with maximum two figures calculated erroneously by 0.25, 100-people game statistic will be:

$2 \times 0/25 = 0/5$

Erroneous and vain score in innovative plan will be:

$0/5 \times 7 = 3/5$

Meaning establishing justice is about 10 to 20 times better with innovative judgment plan.

Justice establishment ratio in two plans: $280:14 = 20$

Dividing two plans vain scores, we will have: $70:3.5 = 20$

So, justice will be established better in innovative plan.

Yet, with the software method, errors and biases of the judgment plan will be none.

And justice establishment will be 100 times over with innovative plan.

With the third method, namely, spare time method, no ambiguity will remain and the problems and issues of this sport will be removed and justice will be established.

Practicing the judgment plan will result in the players playing with double peace and champion chess players rights will be protected and innovative judgment plan virtues will be flourished.

Trusting in God almighty judgment flaws will be removed and the chess will be more beautiful and achieve their desirable promotion, and the judgment and judges will be reliable and the players will be satisfied.

Evaluation Report

Author: Technical Commission

Sub-Committee: IA ArasuB, IA FI Dinu-Ioan Nicula

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Scope of the Report

This report represents detailed testing on the usage of ChessNoteR devices by "Black Mirror Studio". The analysis is performed considering the relevant articles of Section C (02. Chess Equipment / 02. FIDE Compliant Electronic Chess Equipment) of the FIDE Handbook.

Our report relies on the two models shipped to the testers:

1. ChessNoteR N6 and
2. ChessNoteR N9

which are of the same build with the version 2.3.1. And then upgraded to V 2.3.2

Product description:

Developers	Black Mirror Studio
Software Version ● Device 1 ● Device 2	V 2.3.2 ChessNoteR N6 ChessNoter N9

Background

On 28 October 2022, Mr. Joey Troy from "Black Mirror Studio" requested FIDE to test and certify the ChessNoteR devices for "use at official FIDE tournaments". FIDE have forwarded the request to TEC, the Technical Committee Chairman, Dr Tiberiu Georgescu, on 9th of February 2023, had an internal discussion with TEC Management and in consultation with FIDE, a sub-committee with two testers were appointed:

● IA FI Dinu-Ioan Nicula (ROM)
● IA Arasu B. (IND)

Both the testers have experience in software development and are well versed in the game of chess itself.

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Description of the Software

ChessNoteR V 2.3.2 is a simplified and innovative solution for digitising chess notation for games that are played offline. Black Mirror Studio have built a software "ChessNoteR" and deployed it on the customised operating system of two Android devices (NEXUS 6 & NEXUS 9).

ChessNoteR N6

The ChessNoteR N6 features include 32GB or 64GB internal storage, a Qualcomm Snapdragon 805 @ 2.70Ghz Quad-Core Processor, with 3GB of RAM.
A 5.96-inch screen @ 1440×2560 pixels and an internal 3220 mAh battery that supports turbocharging capabilities using a Micro USB Cable.

ChessNoteR N9

The ChessNoteR N9 features include 16GB or 32GB internal storage, an Nvidia Tegra K1 @ 2.3GHz dual-core, with 2GB of RAM, an 8.9-inch screen @ 1536 x 2048 pixels and an internal 6,700 mAh battery using a Micro USB Cable.

Both the devices have the customised operating system which will have only the ChessNoteR software and the device settings. This makes the software and device more secure to use on the tournament conditions with the Fair play measures.
Options like tournament management and opponent management is handier for the players in the long run. The software has various board setting options and can connect to the computer to transfer the games.

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Practical Experience of Usage

Test Conditions

IA FI Dinu-Ioan Nicula
- All tests were done in family games, in conditions as possible similar with the official tournaments

IA Arasu B.
- All tests were done on the club tournaments.
- All tests in room lit conditions.

Comments

1. The devices were built with the consideration of Fair Play measures, i.e no connection can be established to the device while the game is in progress.
2. The format of N6 is fit to any board, while the format of N9 can create some problems for smaller boards.

General Recommendations

1. Until recently, Section C.02 of the FIDE Handbook mandated the display of at least the seven most recent moves on the display. It has come to our attention that this regulation was omitted, seemingly without the prior knowledge of the previous SPP- and TEC Committees. The current TEC Committee considers this rule to be of paramount importance. However, given that vendors were unaware of this requirement, it would be unreasonable to enforce it at this juncture. Consequently, the TEC Committee is committed to reinstating this regulation in some form within the FIDE Handbook.
2. "8.3 The score sheets are the property of the organiser of the competition", as per the FIDE rules. So we recommend that there should be a provision where all the electronic score sheets should be connected to a central device of the organiser.
3. As ChessNoteR will be a single point of recording, it should have an option for

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the arbiters to record in case of illegal or in case of any penalties.

4. To avoid any time difference between the clock on the board vs chessnoteR clock, it should connect to the board clock. Due to the timer on the ChessNoteR recording the time when the move is recorded on the device, it doesn't mean that the clock is pressed.

5. Consider an option to synchronise the score sheets in real time to a centralised device, then it would allow the organiser to live stream the games/matches.

6. We recommend streaming with a delay by "n" number of moves/minutes.
    a. If there is an option to control this from the centralised device, then it would give more option/control for the organisers.
    b. The only question here is how both players' devices can be synchronised and stream a single game?

7. After the game is over, there should be some other options to transfer the games (e.g. via Bluetooth). Currently the games can be transferred only to the owner's email.

8. Use of wi-fi is limited to the update of the software and operating system.
    a. It can be improved to import the pairing from the tournament by connecting to websites like chess-results.
    b. While the game is in progress wi-fi can be used to stream the games, given that it should adhere to the Fair play Measures.

9. Considering the cost in mind, the device can have more features like Game mode and Practice mode. This will make the users use the device effectively.
    a. While the user/player enters the game/tournament mode there should be a log of all action and that should also be connected to a centralised device.

10. The number of moves visible for the arbiters must comply with the FIDE recommendations on all the devices.

Recommendations to the FIDE Board

Urgent i.e. before any endorsement

The Technical Committee recommended the devices to be approved and endorsed.

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As soon as possible

1. Up
2. Arbiter mode to record any time penalties / warnings and to check the rule of three/five fold repetition and 50/75 moves.
3. Connected ChessNoteR to the clock on the board for accurate recording of the time of a move.
4. A "forced" share/sync immediately after the game is over to the organiser. Currently only an email is sent to the owner of the device.
5. Capturing special results like - / -, 0-0
6. Improve the view of the log. Currently the move corrections are shown as the next move, it must be improvised to show moves as a sub variation of the move corrected or the move correction can be highlighted with annotations.
7. The skip move feature should be introduced with the flag based on the increment i.e if there is an increment with more than 30 seconds then the skip move is not enabled.

"Nice-to-Have"

1. Import of round data for Swiss and Round Robin Tournaments (individual and team) from excel, csv files.
2. Centralised management of devices, like sharing the pairing from the master device.
3. Comparison of moves of both the players
4. Stream API to take the feed of the games. If streaming enabled, notification of illegal moves in the centralised device.
5. Consider the testing report below for more enhancements.

Conclusion

We are happy to see the Black Mirror Studio reacting immediately and addressing the critical issues. We are looking forward to addressing the items listed in "as soon as

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possible" and "nice to have" sections in the next versions.

In general we are delighted by the technology and the prospects it brings to the game of chess. We believe ChessNoteR is an important effort towards developing chess.

References

1. FIDE Handbook
2. Chess NoteR Manual
3. Promotional Videos

Addendum A - Controlled Use Test Cases

IA FI Dinu-Ioan Nicula	IA Arasu B
1. Is it possible to read the information on the displays at a distance of 2 metres from the scoresheet?	
ChessNoteR N6: Yes **ChessNoteR N9:** Yes	**ChessNoteR N6:** Yes, Only 3 moves are visible on the screen. **ChessNoteR N9:** Yes, Only 5 moves are visible on the screen. In case the number of moves requirements is defined from FIDE the device needs to be updated accordingly.
2. Is there any sound given by the scoresheet during or at the end of game?	
ChessNoteR N6: No **ChessNoteR N9:** No	**ChessNoteR N6:** No **ChessNoteR N9:** No

3. Is there a low battery indication?	
ChessNoteR N6: Yes **ChessNoteR N9:** Yes	**ChessNoteR N6:** Yes **ChessNoteR N9:** Yes
4. If the answer to test 3 is yes, is this indication shown immediately after the scoresheet is set up?	
ChessNoteR N6: Yes **ChessNoteR N9:** Yes	**ChessNoteR N6:** Yes **ChessNoteR N9:** Yes
5. Is it possible to change or delete indications of the scoresheet by default?	
ChessNoteR N6: Yes **ChessNoteR N9:** Yes	**ChessNoteR N6:** Yes **ChessNoteR N9:** Yes
6. Is there a short manual on the score sheet?	
ChessNoteR N6: Yes, online **ChessNoteR N9:** Yes, online	**ChessNoteR N6:** Yes **ChessNoteR N9:** Yes

7. Is the scoresheet stable during use, especially when players are short on time?	
ChessNoteR N6: Yes **ChessNoteR N9**: Yes	**ChessNoteR N6**: Yes **ChessNoteR N9**: Yes
8. Did you make test under normal tournament conditions with at least five players?	
Test done in the family, with five players	Test was done at the club tournament with 10 players.
9. Did you have problems to change the move counter?	

ChessNoteR N6: No
 	
ChessNoteR N6: No
	ChessNoteR N6: No
	
	  Only Automatic serial number is available
	
	ChessNoteR N9: No
	
	  Only Automatic serial number is available

10. Does the device log user actions in game mode to prevent or detect foul play?	
ChessNoteR N6: No **ChessNoteR N9**: No	**ChessNoteR N6**: No **ChessNoteR N9**: No

11. Is the device dedicated for notating chess games only, or can it be used for any other purposes, e.g. see all previous games?	
ChessNoteR N6: For any other chess purposes **ChessNoteR N9:** For any other chess purposes	**ChessNoteR N6:** Yes, the previous games can be seen **ChessNoteR N9:** Yes, the previous games can be seen
12. Does the device fully comply with FIDE rules?	
ChessNoteR N6: Yes. **ChessNoteR N9:** Yes.	**ChessNoteR N6:** Yes **ChessNoteR N9:** Yes
13. Does the notation comply with the requirements of the FIDE Laws of Chess? Note that the use of figurines to represent the pieces, rather than letters, is allowed.	
ChessNoteR N6: Yes **ChessNoteR N9:** Yes	**ChessNoteR N6:** Yes **ChessNoteR N9:** Yes
14. Is it possible to notate the moves of the game with a finger, a stylus, or both?	
ChessNoteR N6: For making the moves on the device it can be used only the finger, not the	**ChessNoteR N6:** Moves are recorded by making the move on the device using the

stylus **ChessNoteR N9:** For making the moves on the device it can be used only the finger, not the stylus	fingers only. **ChessNoteR N9:** Moves are recorded by making the move on the device using the fingers only.
15. Who is able to switch out of game mode after the game – the player, or by the arbiter?	
ChessNoteR N6: Both **ChessNoteR N9:** Both	**ChessNoteR N6:** Both **ChessNoteR N9:** Both
16. Is it possible to switch out of game mode to another mode during the game?	
ChessNoteR N6: Yes **ChessNoteR N9:** Yes	**ChessNoteR N6:** Yes **ChessNoteR N9:** Yes
17. Is the game notation of at least the 7 most recent moves clearly visible for the arbiter?	
ChessNoteR N6: No, only 3 moves **ChessNoteR N9:** No, only 3 moves	**ChessNoteR N6:** No **ChessNoteR N9:** No
18. Is the device being in "game mode" clearly visible for everyone?	

ChessNoteR N6: No	ChessNoteR N6: No
ChessNoteR N9: No	ChessNoteR N9: No
19. Is it possible to go out of game mode by accident or deliberately, without notifying this to the player, his opponent or arbiter? Is this also clearly visible to all parties?	
ChessNoteR N6: Yes	ChessNoteR N6: Yes
ChessNoteR N9: Yes	ChessNoteR N9: Yes
20. Is it possible to scrolling through the move list?	
ChessNoteR N6: Yes	ChessNoteR N6: Yes
ChessNoteR N9: Yes	ChessNoteR N9: Yes
21. Is it possible to make corrections to the notation of previously entered moves?	
ChessNoteR N6: Yes	ChessNoteR N6: Yes
ChessNoteR N9: Yes	ChessNoteR N9: Yes
22. Is it possible to enter illegal moves?	
ChessNoteR N6: Yes	ChessNoteR N6: Yes
ChessNoteR N9: Yes	ChessNoteR N9: Yes

23. Does the device detect illegal moves automatically?	
ChessNoteR N6: No **ChessNoteR N9**: No	**ChessNoteR N6**: No **ChessNoteR N9**: No
24. Is it possible to enter the clock time, draw offers and other abbreviations permitted by the Laws of Chess?	
ChessNoteR N6: Yes **ChessNoteR N9**: Yes	**ChessNoteR N6**: Draw offer can be noted. Clock time is recorded automatically, its time of move made in device not when the clock is pressed. **ChessNoteR N9**: : Draw offer can be noted. Clock time is recorded automatically, its time of move made in device not when the clock is pressed.
25. Is it possible to input the position using a figurine notation?	
ChessNoteR N6: No **ChessNoteR N9**: No	**ChessNoteR N6**: No **ChessNoteR N9**: No
26. Is it possible to skip the moves of one or more turns if the player is permitted to temporarily stop recording their moves in accordance with the Laws of Chess?	

ChessNoteR N6: Yes **ChessNoteR N9:** Yes	**ChessNoteR N6:** Yes **ChessNoteR N9:** Yes
27. If stalemate or checkmate is missed by the players, or an illegal move is made by the player, does the device allow subsequent moves to be recorded?	
ChessNoteR N6: Yes **ChessNoteR N9:** Yes	**ChessNoteR N6:** Yes **ChessNoteR N9:** Yes
28. Does the device have an automatic move counter available?	
ChessNoteR N6: Yes **ChessNoteR N9:** Yes	**ChessNoteR N6:** Yes **ChessNoteR N9:** Yes
29. Is the device able to restart the notation from the initial position, or re-establish the notation if there is a problem with the device?	
ChessNoteR N6: No **ChessNoteR N9:** No	**ChessNoteR N6:** No **ChessNoteR N9:** No
30. Does the device have an arbiter mode with additional features?	
ChessNoteR N6: No	**ChessNoteR N6:** No

ChessNoteR N9: No	ChessNoteR N9: No
31. Is access to arbiter mode restricted to arbiters during the game?	
ChessNoteR N6: No ChessNoteR N9: No	ChessNoteR N6: No Arbiter Mode ChessNoteR N9: No Arbiter Mode
32. Does the arbiter mode have the ability to check threefold repetition (or five fold repetition) of a position?	
ChessNoteR N6: No ChessNoteR N9: No	ChessNoteR N6: No Arbiter Mode ChessNoteR N9: No Arbiter Mode
33. Does the arbiter mode have the ability to check the fifty move (or seventy-five move) rule?	
ChessNoteR N6: No ChessNoteR N9: No	ChessNoteR N6: No Arbiter Mode ChessNoteR N9: No Arbiter Mode
34. Does the arbiter mode detect checkmate or stalemate?	
ChessNoteR N6: No ChessNoteR N9: No	ChessNoteR N6: No Arbiter Mode ChessNoteR N9: No Arbiter Mode

35. Does the arbiter mode allow corrections to the notation in the case of illegal moves?	
ChessNoteR N6: No **ChessNoteR N9:** No	**ChessNoteR N6:** No Arbiter Mode **ChessNoteR N9:** No Arbiter Mode
36. Does the device have an owner mode with additional features?	
ChessNoteR N6: No **ChessNoteR N9:** No	**ChessNoteR N6:** No other Mode **ChessNoteR N9:** No other Mode
37. Is the owner mode completely locked out during a game?	
ChessNoteR N6: No **ChessNoteR N9:** No	**ChessNoteR N6:** No other Mode **ChessNoteR N9:** No other Mode
38. Does the device have any functionality other than specifically related to recording the moves of a chess game, either to do with chess or otherwise?	
ChessNoteR N6: It can have, but it is not allowed **ChessNoteR N9:** It can have, but it is not allowed	**ChessNoteR N6:** No other application **ChessNoteR N9:** No other application

39. Is it easy to identify that the device is in owner mode?	
ChessNoteR N6: No owner mode **ChessNoteR N9:** No owner mode	**ChessNoteR N6:** No owner mode **ChessNoteR N9:** No owner mode

Sample EMail received from the Device

Log file - LogFile

ScoreSheet - ScoreSheet

PGN - PGN