



# BETTING CORRUPTION AND MATCH-FIXING IN 2023

A review by Sportradar Integrity Services

March 2024

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# FOREWORD

In the past year, Sportradar Integrity Services has continued to be a key service provider to the world of sport. As it stands, over 220 sporting bodies and state authorities are partnered with us to utilize our Anti-Match-Fixing solutions, while our market-leading Universal Fraud Detection System (UFDS) currently oversees more than 850,000 matches annually across over 70 sports.

In 2023, Sportradar detected 1,329 suspicious matches across 11 sports in 105 countries, surpassing 1,000 suspicious matches for the second consecutive year of UFDS history. As we continue to invest significant resources in developing Artificial Intelligence (AI) within the UFDS, and as the Sportradar Integrity Exchange (SIE) expands to now encompass 77 betting operators, our ability to detect suspicious matches is more refined than ever before.

To contextualise the data from 2023, compared to 2022, the overall frequency of suspicious matches in all sports was consistent, standing at 0.21% (one in 467) of all sporting events monitored by the UFDS. Soccer and basketball remain the top two sports affected by match-fixing occurrences, in-line with our expectations at the start of the year, as informed by historical data and evolving trends in recent years.

2023 saw significant advancements in Sportradar's technology capabilities. Our ongoing investment and innovation in the technology fuelling the UFDS have enabled it to monitor sporting events at a more advanced level, and identify more suspicious incidents than ever before. A key factor in our growth has been the continuous advancement of artificial intelligence. In 2023, 977 suspicious matches were detected by AI, which represents a 123% increase from 2022; a clear indicator that the AI's overall performance is continuously improving. This AI-driven technology has firmly established itself as the gold standard in sports-betting corruption detection, enhancing our ability to detect diverse forms of match-fixing.

Meanwhile, the SIE – launched in early 2022 – continues to go from strength-to-strength, with 77 betting operators now part of this global network where they share suspicious betting information, aiding in detecting more suspicious incidents, therefore helping to initiate more investigations. In 2023, 449 matches were flagged by betting operators in the SIE across 12 sports, of which 159 were later classified as suspicious alongside analysis from the UFDS. The number of matches alerted by the SIE equated to a 45% growth over 2022, reflecting the rapid expansion of the network this year, with further growth anticipated in the years ahead.

Our multi-faceted approach to sports integrity continued to contribute to hugely positive results in 2023, with 147 sporting and criminal sanctions across 39 separate cases issued in the year supported by Sportradar's data and reports. One major case which concluded in June 2023 saw 10 snooker players found guilty of match-fixing and other charges. Two players, who were found to be the primary orchestrators, were banned from the sport for life. This investigation from the World Professional Billiards and Snooker Association (WPBSA) saw Sportradar and the WPBSA closely collaborate from the inception of the case, with extensive investigative support from our Intelligence & Investigations team, as is outlined in further detail within this report. We anticipate contributing to many more successes in the fight against match-fixing, as the AI powering the UFDS evolves and the SIE network expands.

In terms of preventative measures, in late 2023, our Education & Prevention (E&P) team reached the milestone of 100,000 all-time engagements; a tremendous achievement demonstrating the outreach and impact of our educational efforts over the past decade, as part of proactive, preventative measures supporting global sport.

In 2023 alone, we were proud to deliver education and training to over 20,000 participants across 47 projects via a combination of in-person and online workshops, personalised educational consultancy, and digital education platforms. Taking proactive measures such as focused education is crucial in combating match-fixing. It is important for sports stakeholders worldwide to employ these strategies more frequently with athletes, coaches, referees, and other staff. This approach is beneficial not just for its preventive impact, but also for enhancing general knowledge and awareness on various important integrity topics.

Overall, many very positive milestones were reached in 2023, yet for substantial long-term improvement in anti-match-fixing efforts, a greater focus on integrity from more sports stakeholders is still necessary. This includes not just bet monitoring, but also investment in education, intelligence collection, comprehensive investigations, and evidence gathering for disciplinary and criminal proceedings. We are hopeful that over time, a deeper understanding of integrity risks and mitigation strategies will spread across the sports world. At Sportradar, we are proud to contribute to this goal of a cleaner and fairer world of sport, and are committed to continue doing so in the decades to come.



**Andreas Krannich**

EVP, Integrity, Rights Protection & Regulatory Services

# EXECUTIVE SUMMARY

- 1.** In 2023, Sportradar Integrity Services detected a total of 1,329 suspicious matches across 11 sports. These matches were detected in 105 countries across five continents, highlighting the persistent issue of match-fixing in global sport. However, reassuringly, data indicates that over 99.5% of sporting events remain untainted by match-fixing, with no single sport exhibiting a suspicious match ratio greater than 1%. Taking into account advancements in AI which have improved our detection abilities, the prevalence of match-fixing has not increased.
- 2.** Soccer was again the most affected sport with 880 suspicious matches, while basketball remained the second sport most affected by match-fixing occurrences at 205 matches. Across all sports, the suspected manipulation rate stood at one in every 467 matches, remarkably consistent with the figure of one in every 473 matches from 2022. This shows that while the majority of sporting events remain unaffected by betting corruption, incidents of match-fixing continue to infiltrate global sports.
- 3.** Geographically, Europe led with the highest number of suspicious matches (667), followed by Asia (302) and South America (217). The most significant increases in terms of suspicious match numbers were Asia (+60) and Europe (+32) while other regions saw similar figures to the previous year. In total, 40% of suspicious matches occurred within the top 10 countries most impacted by match-fixing in 2023.
- 4.** The continuous advancement and use of Artificial Intelligence (AI) within the UFDS once again played a pivotal role in detecting suspect activity. In 2023, 977 suspicious matches were identified by AI, which represents a 123% increase from 2022; a clear indicator that the AI's overall performance is continuously improving. This AI-driven technology is now establishing itself as the gold standard in sports betting fraud detection.
- 5.** Account-level betting data from operators continues to be a crucial factor in detecting competition manipulation. In 2023, 51% of the 1,329 suspicious matches were identified, in part, using account-level betting data. Its effectiveness is best demonstrated when it is considered that in three sports – volleyball (85%), tennis, and table tennis (both 100%) – this data was used to identify most or all suspicious matches as indicated. With a record number of suspicious matches also confirmed using data from Sportradar Integrity Exchange (SIE) operators in 2023 (159 matches), account-level betting data continues to show its important value in identifying suspicious sporting events.
- 6.** Despite the challenges, sporting stakeholders continued to fight back in 2023. Sportradar's data and reports contributed to or supported processes that resulted in 147 sporting or criminal sanctions against those found guilty of cheating in sports and breaking the law, across 10 different sports, spanning 23 countries. Sportradar Integrity Services remains steadfastly committed to supporting our sporting partners and law enforcement in the ongoing battle against match-fixing.



It should be noted that the figures and data in this report are not wholly representative, since Sportradar Integrity Services does not monitor every sport in the same way. For instance, some are not officially and systematically monitored and covered in a complete way in the UFDS. The data are therefore a strong indication of the true rate of match-fixing issues, but not a complete picture.

All data and statistics are based on Sportradar's proprietary data unless otherwise indicated.

# OVERALL MATCH-FIXING TRENDS

In 2023, Sportradar Integrity Services detected **1,329 suspicious matches in 11 different sports, spanning 105 countries.**

Throughout 2023, match-fixing incidents occurred in new tournaments and territories, while maintaining their presence in many sports competitions that have

historically been affected by match-fixing. In total, 2023 saw the highest number of suspicious matches ever recorded in Sportradar's UFDS and a marked 9% increase on 2022. Overall, 1,295 matches of interest came from men's sporting events, while 34 came from women's sporting events.

## Suspicious Matches by Region



While the number of suspicious matches has risen in all regions apart from South America and Oceania when compared to 2022, the biggest increases in terms of suspicious match numbers were Asia (+60) and Europe (+32), while other regions saw similar figures to the prior year. This shows that match-fixing continues to be a global issue, with those orchestrating manipulation continuing to target areas where they have enjoyed success in recent years.

## Suspicious Matches by Country – Most Impacted

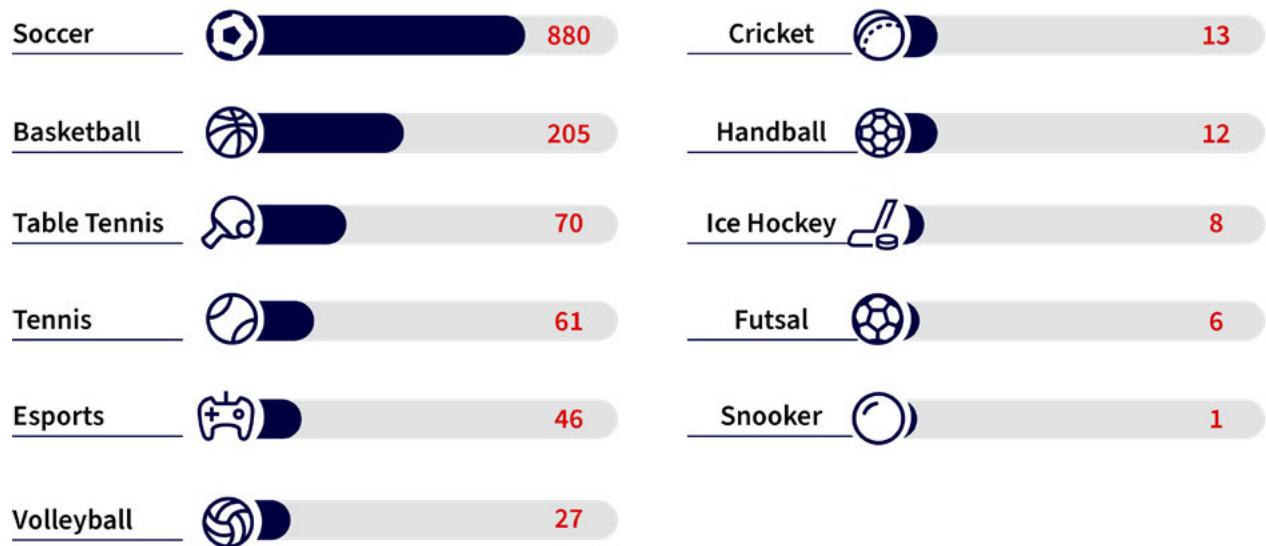


Compared to 2022, there was a notable decline in suspicious matches detected in Brazil (-44), although it still retained the top spot globally. During the year, Sportradar monitored 118 soccer competitions in Brazil, overseeing approximately 9,000 matches. Among these, 109 matches, constituting 1.21% of the total, were flagged as suspicious. In terms of competitions affected, 15 matches were played in competitions organized by the Confederação Brasileira de Futebol (CBF) and 94 matches were played in competitions organized by state federations. Overall, there was a 29% reduction in the total number of suspicious sporting events in Brazil from 2022 to 2023, marking the first decline since 2020.

Russia also saw a decrease in suspicious matches (-37), which had it drop from second to fourth in terms of most affected countries year-on-year. Meanwhile, in terms of the top 10 countries affected, the biggest increases compared to 2022 were the Philippines (+28), which moved into the top three, and Peru (+20).

40% of all suspicious matches were played in the top 10 countries affected by match-fixing. Soccer accounted for 71.5% of the suspicious matches in these 10 countries, while basketball represented 17.5%, volleyball 3.5%, table tennis 3%, and cricket, handball, ice hockey and tennis together making up the remaining 4.5%

## Sports with Suspicious Matches



In 2023, 66% of the total suspicious matches occurred in soccer. This represents a small increase in percentage terms from 2022, which saw 64% of suspicious matches occur in soccer, and continues to correlate with expectations, given soccer's popularity among sports fans globally, and as a betting medium. In actual terms, this represented a rise of 103 matches.

Basketball had a small decrease in suspicious match numbers compared to 2022 (-15) although it remains

the clear number two sport affected by match-fixing. Meanwhile, volleyball saw a significant rise in match-fixing incidents (+22), with suspicious matches detected across eight countries in that sport.

In total, there were 449 suspicious matches detected outside of soccer in 2023 (across 10 sports), compared to 443 across 11 sports in 2022 – demonstrating a consistent level of match-fixing activity outside of the number one global sport.





## Suspicious Match Frequency

Reviewing the top-five sports by suspicious-match frequency in 2023, soccer accounted for the most, at a rate of one in every 160 matches. This was followed by basketball at a rate of one in every 244 matches, and then esports at one in every 643 matches, with tennis and table tennis at one in every 1,882 and 2,197 matches respectively. Overall, across all sports, the suspected manipulation rate is one in every 467 matches. This final figure was remarkably similar to 2022, which saw a suspected manipulation rate of one in every 473 matches.<sup>1</sup>



Frequency of match manipulation per sport monitored by Sportradar Integrity Services

These statistics consistently demonstrate that most sporting events are untainted by match-fixing, with over 99.5% of them being clean across various sports. Notably, no individual sport exhibited a suspicious match ratio exceeding 1%. Nevertheless, the spread of match-fixing to new regions and competitions is concerning, as each case detected poses a significant risk to the integrity of the sport and the competition in question.

In response to this challenge, Sportradar is unwavering in its commitment to provide the UFDS service at no cost to sports federations and leagues worldwide. This initiative aims to ensure consistent monitoring and protection of all sporting events.

<sup>1</sup>Based on official UFDS monitoring for partners and additional unofficial monitoring

<sup>2</sup>Traditional esports titles including Counter-Strike and Dota 2, but excluding esports titles covering esoccer and ebasketball.

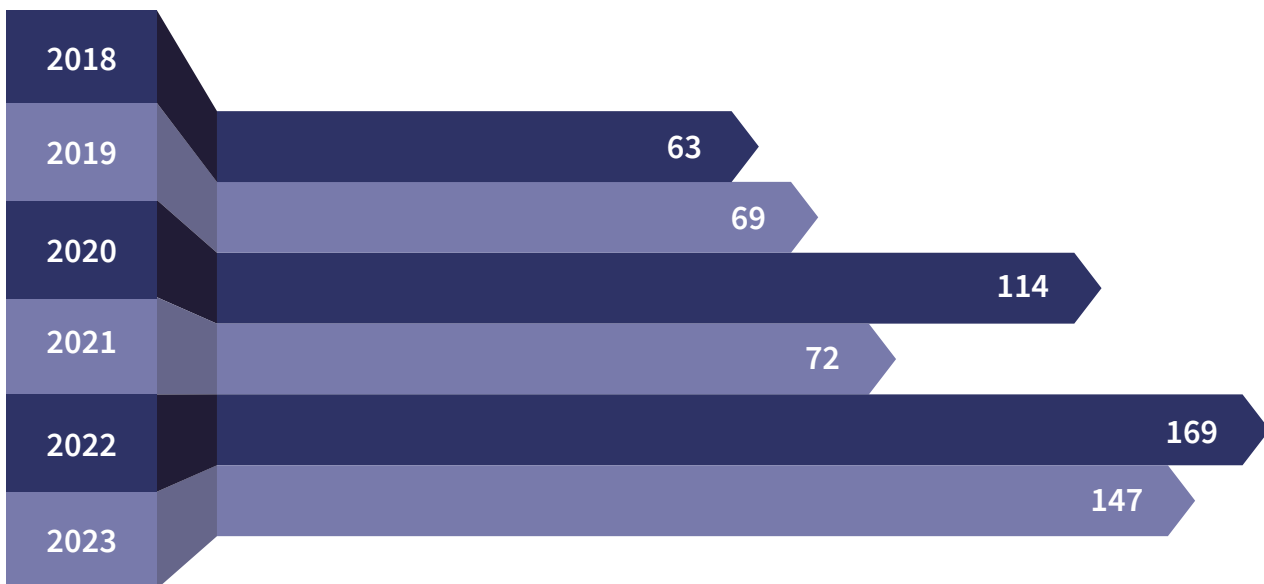
# SANCTIONS SUPPORTED BY SPORTRADAR INTEGRITY SERVICES

Over the past two decades both UFDS data and reports, and the work of our investigation team, have supported over 850 sanctions, both sporting and criminal, imposed on individuals and organizations within the global sports community. 2023 marked another significant success in terms of the cases supported by Sportradar, with 147 sanctions issued in 39 separate cases across 10 different sports and 23 countries. These sanctions, handed down by sports federations or criminal courts, underscore the commitment of all parties involved in maintaining

the integrity of the competitions under their jurisdiction. Notably, nine of these sanctions were criminal convictions.

Soccer accounted for a significant portion of the sporting sanctions in 2023, but sanctions were also imposed in sports such as snooker, tennis, and table tennis, among others. A notable example was in snooker, where 10 players faced lengthy suspensions, including two lifetime bans, as outlined further in the next section.

| Type of Sanction | Sports with Sanctions | No. of Countries with Sanctions Delivered |
|------------------|-----------------------|---|
| Sporting (138)   | 10                    | 23  |
| Criminal (9)     |                       |   |



## Historical sanctions supported per year

Sportradar's contributions to sanctioning extend beyond match-fixing, encompassing a range of integrity violations, including anti-doping and compliance and misconduct-related matters. Our work is also helping to address issues affecting athlete wellbeing. This includes responding to the increasing pressures athletes face, both in their personal lives and in their professional performance, especially in the context of social media scrutiny. Our work is helping to track down and assist in proceedings against individuals responsible for directing abuse at athletes. This holistic approach reflects our commitment to safeguard both sporting integrity, and the welfare of athletes in the evolving landscape of global sports.

# SUPPORTED SANCTION: SNOOKER CASE

## Background

In August 2022, Sportradar Integrity Services received reports from its global bookmaker network regarding suspicious betting activity that took place on a snooker match involving Chinese players. Sportradar, as its official integrity partner, shared this betting market intelligence with the World Professional Billiards and Snooker Association (WPBSA). This led to the WPBSA initiating a match-fixing investigation.

## Investigation

In the following months, Sportradar and the WPBSA worked closely together on this investigation, with Sportradar providing analysis of suspicious betting identified through the UFDS, and extensive investigative support from our Intelligence & Investigation team.

- ▶ In August 2022, Sportradar supported the WPBSA with betting data analysis and an intelligence project concerning the snooker player Zhao Jianbo. It was confirmed that Zhao had a connection with a bettor who placed bets on his suspicious match through a shared training venue in the United Kingdom.
- ▶ Later, in October 2022, Sportradar analysed whistleblower information concerning the involvement of Liang Wenbo in approaching other Chinese players with offers to engage in match-fixing in another intelligence development project. Connections were also identified between bettors of interest and individuals known to Liang.
- ▶ Sportradar investigators were deployed to several locations in the United Kingdom in October 2022 to conduct digital forensic extractions of the mobile telephone devices of all players that were suspected of being involved in the match-fixing scheme.
- ▶ Following the extractions, Sportradar assisted with the forensic examination and analysis of the data extracted from the mobile telephones. Most analysis required specialist Chinese language capabilities, which Sportradar was able to provide. Key findings and intelligence insights were disseminated to WPBSA to direct further investigative actions such as interviews.
- ▶ Between October 2022 and January 2023, 10 Chinese snooker players were suspended by the WPBSA from the World Snooker Tour. This included World Number nine Zhao Xintong and World Number 16 and former Masters champion Yan Bingtao.
- ▶ In February 2023, Sportradar scheduled and disclosed all evidence collected during all stages of the investigation. This evidence was summarised in a final investigation report.

## Outcome

The case was heard in London in April and May 2023, and in June 2023, all 10 players were found guilty of match-fixing and other charges. The players Liang Wenbo and Li Hang, who were found to be the primary orchestrators, were banned from the sport for life.

The complexities of the investigation saw our global team of specialist researchers, intelligence analysts and investigators – including a Chinese-language expert – dedicate over 200 hours of investigative support to the case, ultimately helping to bring evidence to light that assisted in proving the charges against these players. The strength of the ongoing collaboration between Sportradar and WPBSA in the anti-match-fixing fight is showcased by these sanctions against those trying to cheat the sport of snooker and provides a blueprint for how to conduct an end-to-end match-fixing investigation.

# THE EVOLUTION OF SPORTRADAR'S BET MONITORING

Sportradar's UFDS utilizes Artificial Intelligence (AI) technology through machine learning algorithms which have been designed, trained, and developed by Sportradar to detect suspicious betting activity.

Since its launch in 2009, the UFDS has built one of the largest databases of betting-related manipulation in the world, and over the past eight years, Sportradar has leveraged this data to develop AI technology and enhance the quality of its monitoring and detection capabilities.

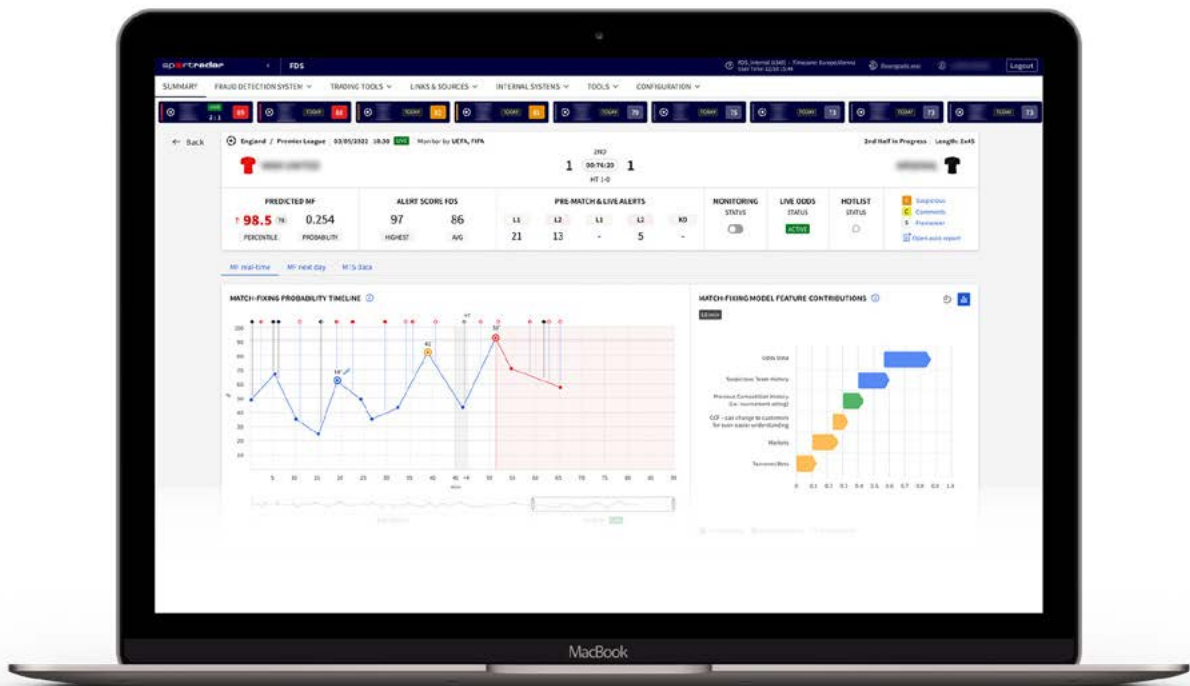
By combining different datasets and sources into a single algorithm, the UFDS – evidenced through the number of suspicious matches detected this year – continues to evolve and improve its ability to detect and report all types of fixing methods to the relevant sports federations and authorities.

The continued growth and depth of ticket data (individual bets) from Sportradar Account-Monitored Bookmakers remains fundamental to the capability of the UFDS, with 51% of all suspicious

matches detected in 2023 identified in part due to account-level betting data. In some sports, this data helped identify suspicious activity in the majority (Volleyball – 85%) or all (tennis and table tennis – 100%) of suspicious matches, highlighting its ongoing importance.

The speed in which these matches are detected is also dependent on the capability of technology. This year, the UFDS was significantly redeveloped to further support the machine-learning output. Analysts now have increased real-time access to data generated by AI on matches the models consider to be suspicious based on the data it has processed, which is a significant milestone in Sportradar's product strategy. Not only does this support a more productive operating model - where each sport has unique configurations and differing sensitivities based on market variables - it also enables faster decision-making when triaging alerts; however, most importantly, it enables better quality and accuracy of detection.





\*Diagram is for illustrative purposes and is not based on real data

In the current iteration of the UFDS, the machine-learning model's output is visualized in two graphs. Firstly, the model's probability rating for an individual match (1 up to 100) is plotted several times along a timeline (center, left). Using a soccer match as an example, the model produces a rating every hour in the 24 hours prior to kick-off, and then once every minute of the match when in-play markets open.

The second graph (center, right) plots the feature contributions of each individual rating. This enables analysts to see why the model rates the match as suspicious by identifying which data (odds movements or account-level betting data) contained the most suspicious elements. Matches which produce a high score of 99 or above are flagged for further review by analysts.

The AI is able to generate this output by processing, on average, over 500 data variables per match, and the UFDS converts this into human-readable content to support the next round of analysis, where betting integrity analysts begin to investigate the odds and account-level data in more detail.

**In 2023, 977 matches that were flagged with a rating of 99 or above and requiring further review by analysts were considered suspicious, which is a 123% increase from last year and a clear indicator that the model's overall performance is continuously improving.**

The graphic below details two instances of matches flagged as potentially suspicious by the model which were classified as suspicious by betting integrity experts at Sportradar.

### Case Study 1

- ▶ A basketball match in Europe was highlighted by AI due to an irregular betting pattern at account-monitored operators.
- ▶ It detected a suspicious betting preference in the live 'Totals' market during half-time for a higher number of points to be scored than the betting markets projected.
- ▶ The AI alerted our team of global analysts to suspicious factors such as the timing of the bets, which occurred during half-time, when there is not any on-court action taking place to legitimately influence bettors, as well as the high deviance in betting stakes from what would be anticipated on a typical match in this competition.
- ▶ Moreover, the normality of the live 'Spread' market (another major betting market) relative to the live 'Totals' market showcased specific, targeted attention from some bettors on this outcome.
- ▶ The match was classified as suspicious, with a report prepared for the relevant partner outlining the areas of suspicion to help inform further investigation.



### Case Study 2

- ▶ A soccer match in a European league was highlighted by AI due to irregular odds movements in the live markets.
- ▶ Specifically, the AI detected abnormal deviations in the movement of live bookmaker odds, compared to what would be expected in a regular fixture, based on a comprehensive dataset containing odds movements from hundreds of thousands of historical soccer matches.
- ▶ In this case, the suspicious odds movements manifested towards the end of the first half (with the score at 0:0) and projected strong confidence from bettors in at least two goals being scored, and the away team losing the match, both of which went on to occur (FT 2:0).
- ▶ After a thorough examination from an expert team of analysts, the match was ultimately deemed to be suspicious in nature, due to the disproportionate betting interest in these outcomes materialising.
- ▶ This case – and many others like it – shows how AI is capable of interpreting the movement of odds as suspicious in the same way an analyst could, but with a fundamentally data driven approach based off hundreds of variables. The work of the analysts then compliments the AI, as they are able to conduct their research supported by the advanced, data driven insights AI can provide in real time, improving the overall efficiency of detecting suspicious matches.



# SPORTRADAR INTEGRITY EXCHANGE: YEAR TWO

After its launch in 2022 and a successful first year of operation, the Sportradar Integrity Exchange (SIE) followed up with even greater success in 2023, with tremendous growth and impact on the integrity landscape. This official collaboration with betting operators in the fight against match-fixing was created by Sportradar to help enhance efforts in the fight against betting-related corruption, and it has delivered on that promise even in its early years.

Sofar, 77 betting operators have signed memorandums of understanding to join as members and partners of the SIE, which is more than double the membership at the end of 2022 (37). These operators encompass direct operations in over 50 countries, with B2B platform members covering many more across five continents. The impact of this global footprint is significant in not only aiding in the detection of suspicious matches, but also in the investigation of them, assisting investigators in mapping out

international networks of corrupt actors. Match-fixing syndicates have the ability to spread their suspicious bets across numerous betting operators in various countries to make detection and compilation of suspicious betting evidence more difficult. The scope of the SIE, in conjunction with the UFDS, helps to mitigate that risk.

The proactive, collaborative nature of the SIE is the key to its success. In 2023, 449 matches were proactively reported by members of the SIE as potentially suspicious, which was a 45% growth over 2022, and when accounting for the increase in matches reported by multiple members, the amount of information proactively provided by operators was nearly double. Of these 449 matches, 159 met the threshold to be confirmed as suspicious after further analysis alongside the UFDS – with SIE data being a key part of the overall betting evidence – which was a growth of greater than 50% from 2022.



The intelligence reported for those matches has been effective in both complete and ongoing investigations. For example, in January 2023, the Court of FIGC (Italian Football Association) suspended three Brazilian futsal players for four years due to their involvement in a suspicious Serie A futsal match, and the two clubs received a three-point deduction. Information from a SIE member identified abnormal wagering for the match to end in a draw (FT 1:1), which was ultimately classified as suspicious by Sportradar Integrity Services, and the ensuing report was crucial in levying these sanctions.

As the SIE enters its third year, its impact will continue to shine as active investigations culminate with sanctions, with SIE data having contributed to six

successful cases in 2023, resulting in 20 sanctions against clubs and individuals. With continued expansion of the membership and the two-way information exchange with betting operators, the Integrity Exchange will further entrench itself as a critical force in the fight against betting-related corruption in sport. In addition, following the introduction of real-time alerting in 2023, the SIE will continue to develop as a platform and implement technical improvements. The objective is to establish the SIE as the most resilient and indispensable channel for betting operators engaged in collaborative efforts against match-fixing.

**Number of SIE Reported Matches Confirmed as Suspicious**





# MATCH-FIXING TRENDS: SPORTS IN FOCUS



## Soccer

Soccer remained the sport most affected by match-fixing occurrences in 2023, as has been the case through the entirety of UFDS monitoring dating back two decades. In total, 880 suspicious matches were detected, a rise of 103 matches compared to 2022.

In terms of the number of countries that witnessed at least one suspicious match, this rose to 85 countries in 2023, compared to 70 countries in 2022. The most

significant rise in match numbers year-on-year was seen in Europe, with a 15% increase in suspicious matches, with smaller rises noted in Asia, South America and other regions taken as a whole. Meanwhile, of the 85 countries affected globally, 36 were in Europe, 18 in Asia, eight in South America, and 23 from Africa and North America combined.

### EUROPE



### ASIA



### SOUTH AMERICA



### OTHER REGIONS





The vast majority of suspicious soccer matches continue to feature suspicious live betting and this occurred in 95% of cases. Within this group of matches, the suspicious betting emerged during the first half of the contest in 70% of cases. This is not unexpected, given that dedicated first half markets were also targeted in around 36% of suspicious matches, and because the opening 15 minutes continues to be the time period most affected by suspicious betting patterns globally. However, there was a decrease in the number of cases which saw the first half markets targeted, from 50% the year prior, with more matches seeing the full-time markets targeted as the primary component of the manipulation.

Combined result manipulations continue to be the most common method of suspected manipulation globally, accounting for 44% of suspicious matches. This allegedly involves a team losing by a minimum

margin of goals (through the Asian Handicap line) and also ensuring a certain number of goals are scored ('Overs'). The second most common suspected manipulation type continued to be 'Overs only' (30%), which only requires a minimum number of goals to be scored, regardless of how the goals come about.

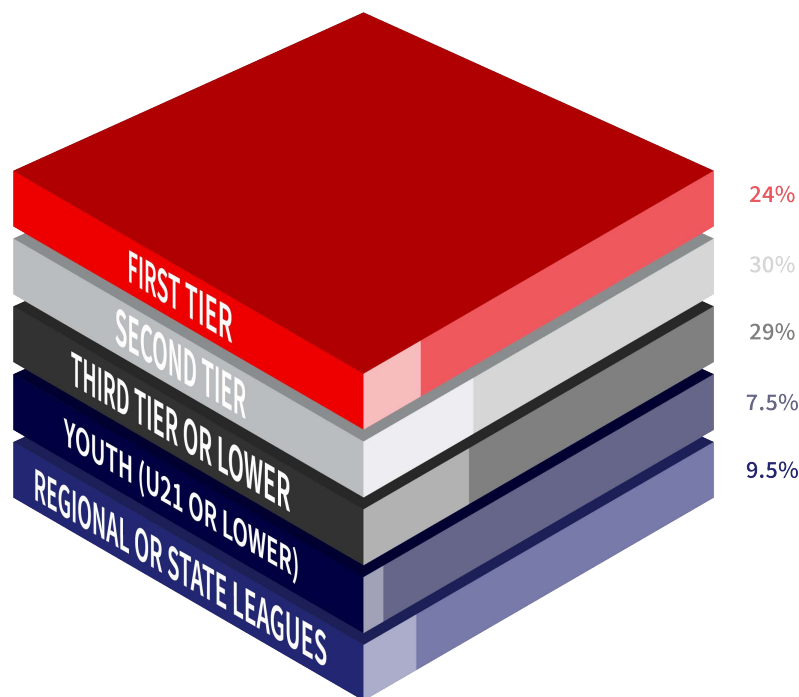
Complex manipulations, such as correct score fixes which generally require the involvement of both teams, account for 5% of all suspected manipulations globally. However, it should be highlighted that in one region, correct score manipulations represented 30% of all suspicious matches. This is very high and far above the global average, and is representative of more teams being involved in match manipulations in this region, as correct score fixes typically need both teams, and the complicity of a large number of players to ensure their success.

### Suspicious soccer matches by method of manipulation





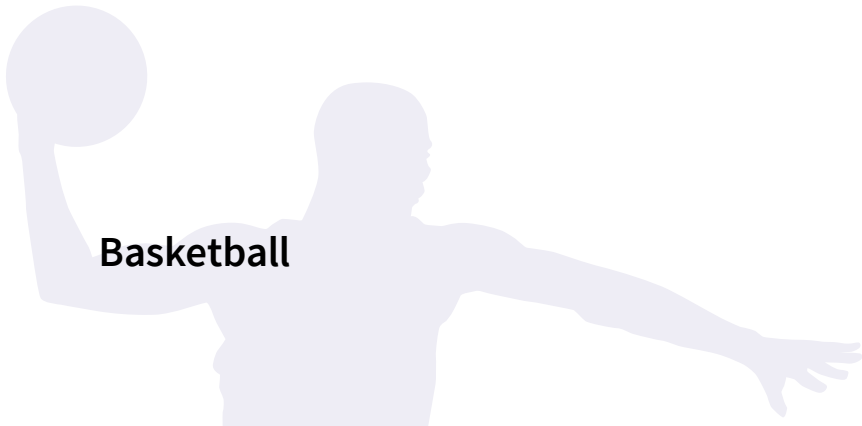
In 2023, the top two tiers of competition were targeted for betting-related manipulation in the majority of suspicious domestic soccer matches globally (54%), with the third tier and below accounting for 29%, rising to 46% when regional leagues<sup>3</sup> and youth competitions are incorporated (this compares to 52% in 2022). In the third tier and below, there is less investment into and focus on integrity safeguards, combined with lower financial incentives for players. This imbalance makes the offers from match-fixers more tempting to some players. Contributing factors include delayed, reduced, or even non-existent salary payments.



### Suspicious domestic soccer matches by level of competition

Interestingly, there was a rise noted in the number of first tier matches affected, increasing from 17.5% in 2022 to 24% in 2023. Typically, the highest tier of national soccer is less susceptible to such practices, as the higher salaries of players serve as a deterrent, and preventative measures like player education and thorough vetting are more prevalent at these elite levels. However, in some regions and countries, these safeguards are not as common, helping to explain the rise witnessed this year.

<sup>3</sup> Regional leagues contain teams from higher tiers in some cases



# Basketball

Basketball retained its position as the sport second most affected by match-fixing occurrences in 2023, continuing the trend which has emerged over recent years. 205 suspicious matches were detected in total, a slightly lower figure to the 220 suspicious matches that were detected in 2022. Regarding the number of countries that observed at least one suspicious match, this number fell slightly to 34 countries in 2023, from the 35 countries affected in 2022.

Similar to 2022, there were suspicious matches detected in five continents in 2023, with 92% of all suspicious matches taking place in Asia and Europe. However, there was one key difference in 2023, as Asia was the leading continent in terms of suspicious matches this year as 109 suspicious matches were detected compared to 63 suspicious matches in 2022. 81 suspicious matches were detected in Europe (137 in 2022), whilst Africa, North America, and South America had a combined 15 suspicious matches.

The Spread market continued to be the primary target of match-fixers in 2023 with 48% of all suspicious matches featuring suspicious betting in

this betting market. The most common suspicious betting preference in the Spread market and in suspicious basketball games in general remains the implicated team 'losing by a minimum margin', with 30% of all suspicious matches in 2023 featuring this method of manipulation, however this represents a decrease compared to 2022 (46%). The other method of manipulation in the Spread market is 'point shaving', which entails the favourite attempting to win the game by a lower margin than expected, namely by a 'maximum margin'. This manipulation method can also become appealing to players on strong and favourite teams because it gives them a chance to manipulate a game for betting purposes, whilst still winning the match. Point shaving accounted for 18% of all suspicious matches in 2023 (up from 10% in 2022) and remains a trend mainly seen in Asian basketball.

## EUROPE



## ASIA

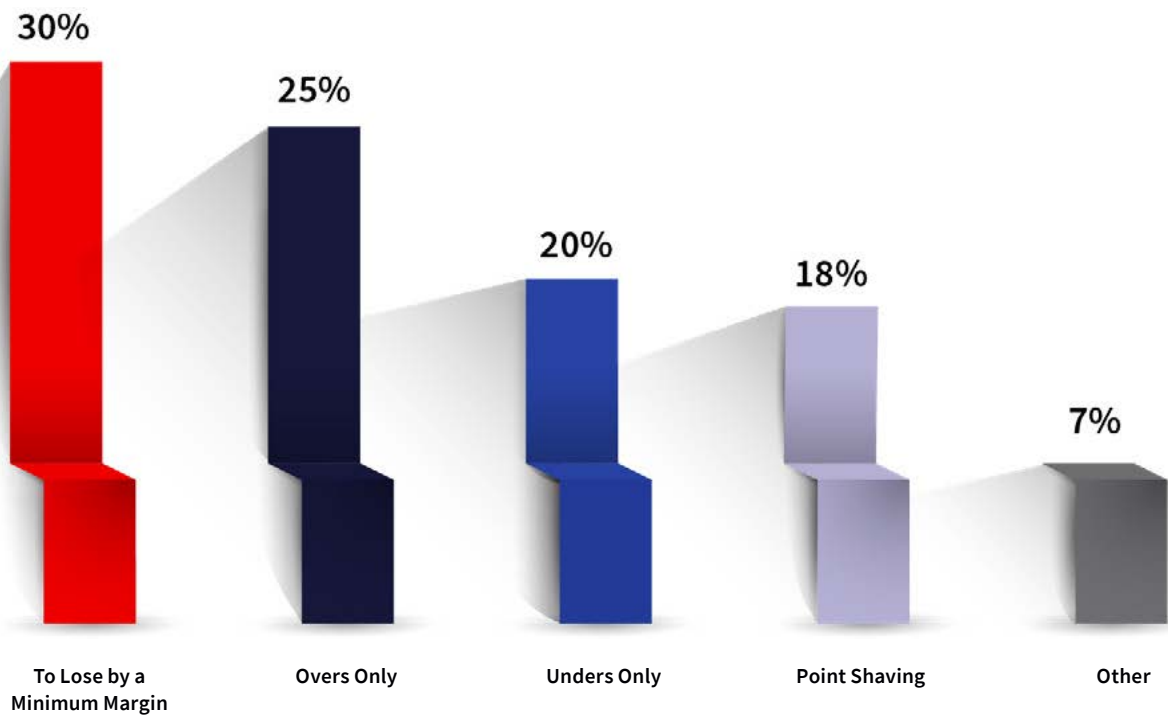


Suspicious matches per year

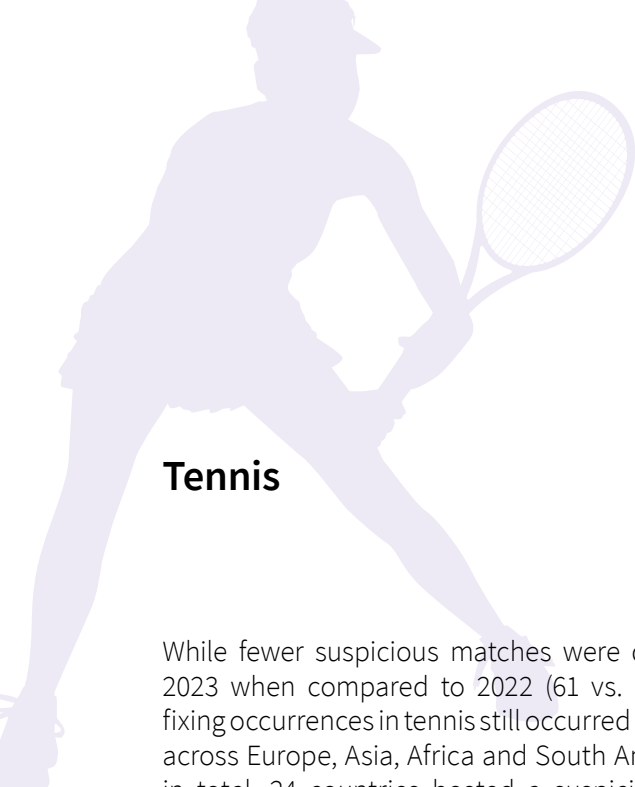


Suspected manipulation of the Totals market continued to be prevalent in 2023. Indeed, 45% of suspicious matches featured betting for ‘more/fewer than X total points’, where the implicated party tries to manipulate the game by attempting to engineer a minimum or a maximum number of points being scored (‘Overs’ or ‘Unders’). As this manipulation method can be attempted by all parties involved in the game – either team or the referees – and does not necessarily impact who wins the game, it is sometimes difficult to assess the side complicit in the manipulation, which has made this an appealing method of manipulation.

Finally, one key emerging suspicious trend in the past two years of basketball activity has been the sustained rise in suspicious matches in women’s competitions. Indeed, there had only been one suspicious women’s basketball match identified in 2021, however, since then there has been 11 and 14 suspicious matches in 2022 and 2023 respectively in global women’s basketball competitions, and in 2023, suspicious women’s teams from three European countries were detected.



Suspicious basketball matches by method of manipulation

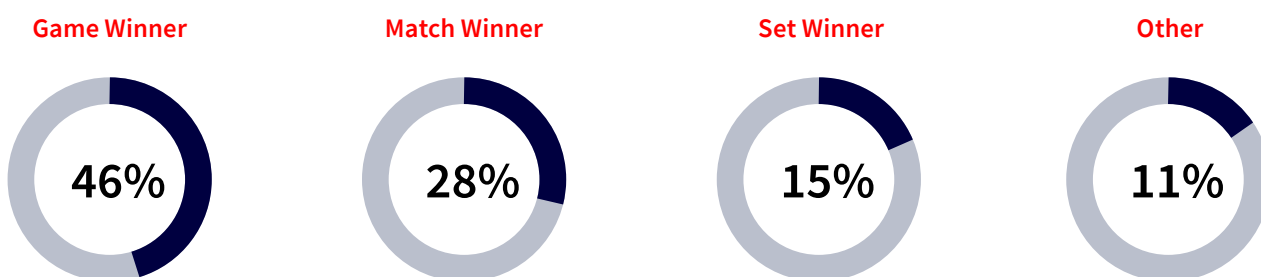


## Tennis

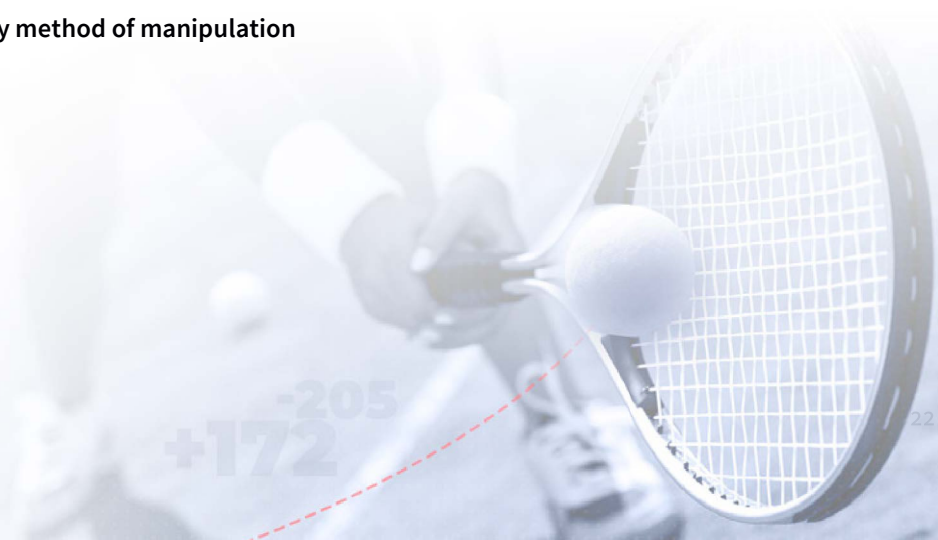
While fewer suspicious matches were detected in 2023 when compared to 2022 (61 vs. 75), match-fixing occurrences in tennis still occurred in countries across Europe, Asia, Africa and South America, and in total, 24 countries hosted a suspicious match. However, it should be noted that due to the tour nature of the sport, the persons responsible for suspected manipulations are not necessarily from or linked to the country where the match took place. In total, 17 of the suspicious matches involved female players, while the other 44 matches featured male players.

The vast majority of suspicious tennis matches involve the suspected manipulation of either the 'Match Winner', 'Set Winner' or 'Game Winner' markets, with these markets targeted in 89% of suspicious matches in 2023.

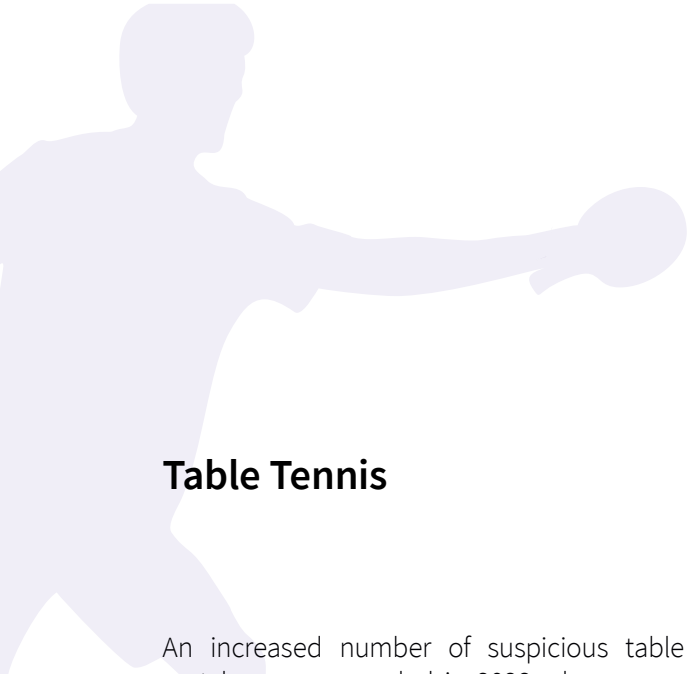
The most prevalent form of suspected manipulation was the 'Game Winner' method – where a player will often deliberately lose their own service game. This manipulation method was observed in 46% of suspicious matches, with players able to commit a double fault or an early unforced error in the rally to ensure that the suspicious betting is rendered successful. Furthermore, given that elite male players hold their service games over 80% of the time, there is an expectation that players hold their serves in typical circumstances, with betting market odds for a break of serve often lucrative as a result. This form of match manipulation also represents an attractive proposition to players, as it is possible to secure illicit betting profits without sacrificing their chances of winning the match and earning prize money.



Suspicious tennis matches by method of manipulation



-205  
+172



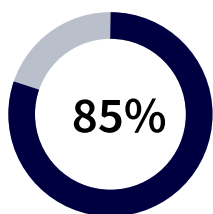
## Table Tennis

An increased number of suspicious table tennis matches was recorded in 2023 when compared to 2022 (70 vs. 63)<sup>4</sup>. Globally, these occurred across eight different countries, seven of which were in Europe. All 70 suspicious matches involved male players.

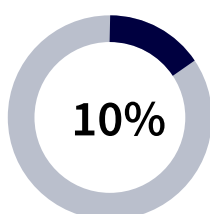
In contrast to the trend observed in suspicious tennis matches, the 'Match Winner' market presented the greatest table tennis integrity risk, as 85% of suspicious fixtures involved the manipulation of the final match result. It is important to note that this reduced targeting of side markets (compared

to tennis) is likely a product of a number of key differences between the sports. Specifically, there is less time to wager on the result of a particular point or game in table tennis when compared to tennis, with points played in quick succession and games typically lasting between 16 and 22 points in total. Furthermore, bookmakers do not offer these table tennis side markets as readily as they do in tennis, with reduced staking limits also restricting the earning potential of a 'spot-fix' for manipulators.

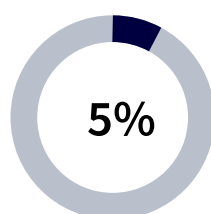
Match Winner



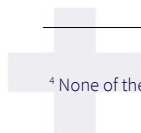
Correct Score



Game or Point Winner

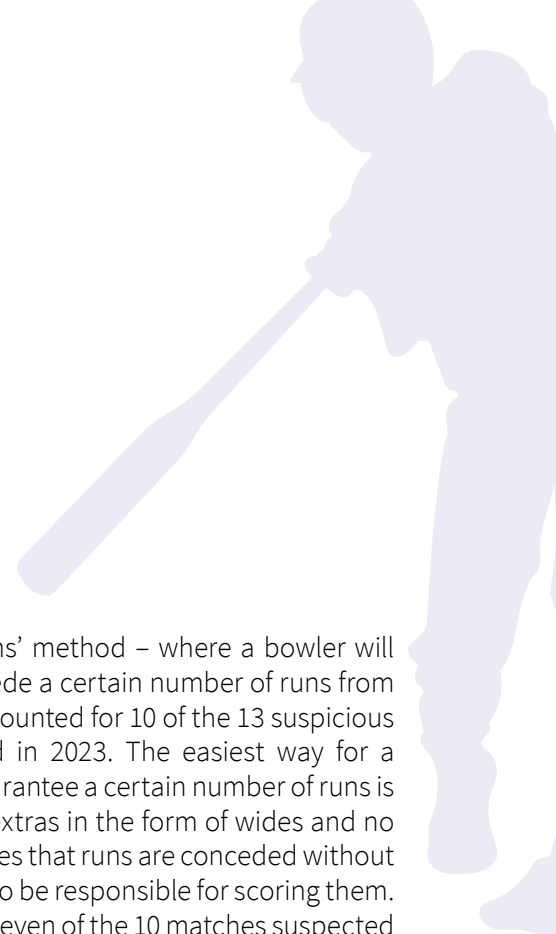


Suspicious matches by method of manipulation



<sup>4</sup> None of the suspicious table tennis matches were from ITTF/WTT events





## Cricket

The same number of suspicious cricket matches were detected in 2023 when compared to 2022 (13), making it the joint highest year on record for the sport. These matches were spread across three continents, with eight countries among those to have hosted a suspicious cricket match in 2023.

While there are occasional instances of cricket matches suspected of being manipulated in the 'Match Winner' market, the most common recent trend is for cricket matches to be targeted for 'spot-fixing'. This means that a specific aspect of the match unrelated to the final result, but for which a betting market exists, was targeted for manipulation. The most prevalent form of suspected manipulation

was the 'Over Runs' method – where a bowler will deliberately concede a certain number of runs from their over; this accounted for 10 of the 13 suspicious matches detected in 2023. The easiest way for a bowler to help guarantee a certain number of runs is through bowling extras in the form of wides and no balls, as this ensures that runs are conceded without the batter having to be responsible for scoring them. Bowlers did so in seven of the 10 matches suspected of being manipulated for a minimum number of runs to be scored in an over, often bowling multiple wides and appearing to help maximise the runs conceded from the over.

### Suspicious matches by method of manipulation

|   |    |
|---|----|
| Minimum no. of Runs to be Scored in an Over | 10 |
| Maximum no. of Runs to be Scored in an Over | 1  |
| Match Winner                                | 1  |
| Player to Score a Maximum Number of Runs    | 1  |

Sportradar Integrity Services is able to detect this activity of interest through data received from account-monitored bookmakers. For example, by analysing this data, it is possible to distinguish the disparity in turnover on specific selections compared to other overs in the match, and any overs which have received elevated turnover could be irregular in nature. For example, one over could see significantly elevated turnover for a minimum number of runs to be scored compared to all other overs in a match. In the absence of any innocent reason for the elevated turnover, the logical explanation for this is that bettors have paid this specific over undue attention, acting upon a prior held knowledge that a minimum number of runs are to be scored in the over, with a view to gaining illicit betting profits.

This monitoring approach is tailored for each sport, as manipulation tactics used differ from sport to sport, and even region to region. Greater emphasis and focus are placed on account-level betting data in sports like cricket where 'spot-fixing' is the more established form of manipulation that is perpetrated, with account-level betting data helping to uncover this form of manipulation more effectively than the traditional method of monitoring odds movements. However, a 360 degree bet monitoring approach as applied by Sportradar, using AI-driven global odds monitoring, incorporating account-level betting data and direct reporting from global betting operators (through SIE) is what is required to maximise the success of detecting suspicious incidents across all of sport.



# ESPORTS IN FOCUS

## Match-Fixing Trends

In 2023, there were a total of 46 suspicious esports matches detected by Sportradar Integrity Services. This figure represents an increase compared to the 36 total suspicious matches detected in 2022.

There were suspicious matches detected in five esports game titles this year with 23 suspicious matches occurring in sports titles such as eSoccer and eBasketball. Dota 2 was the next most targeted game accounting for 12 of the suspicious esports matches, while other titles accounted for six or fewer each. For esports, the expansion of the SIE during 2023 has proven invaluable in obtaining critical evidence of suspicious activity. Notably, Valve officially released Counter-Strike 2 in September 2023 which corresponded to a brief decrease in the frequency of professional tournaments, and in turn, suspicious activity in the game.

eSoccer



20

Dota 2



12

Counter-Strike



6

League of Legends



5

eBasketball



3



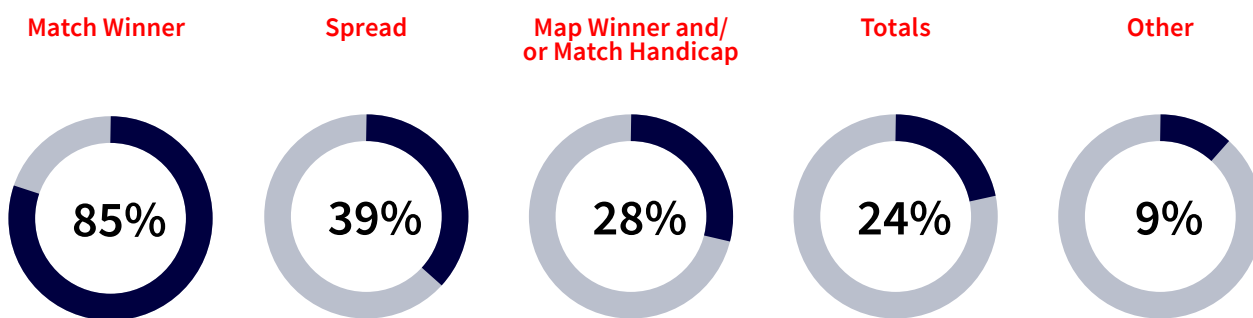


In terms of suspicious matches by region, similar to previous years, European and CIS events saw the highest share of suspicious matches at 61%, followed by Asia at 24%, with the remaining 15% coming from North and South America.

In 2023, the Match Winner market was heavily exploited by match-fixers, with 85% of all suspicious esports matches seeing this market targeted as part of the overall suspected manipulation. The Spread market was the second most targeted market at 39%, which commonly translates to the implicated team losing by a certain number of maps/games. Manipulation of the Totals market slightly decreased in 2023, but continues to be a relevant fixing method with 24% of suspect esports matches containing suspicious betting preferences for either higher or lower of a certain number of maps/games to be

played in a series. Individual map/game betting markets such as 'Map Winner' and 'Map Handicap' have also gained popularity amongst match-fixers this year as a way to maximize potential betting profits, with 28% of suspicious matches seeing one of these two markets exploited.

In terms of when suspicious betting was occurring in the markets, pre-match betting markets were targeted exclusively in 39% of suspicious esports matches in 2023. Live markets were solely targeted in 26% of suspicious matches, while 35% of suspicious matches had both pre-match and live markets targeted. Every year an increase is observed in the rate of targeting of live markets in suspicious esports matches, partly correlated to the increase in live betting options provided by bookmakers for esports matches.



Suspicious matches by markets affected



## Risk Factors

**The rapidly expanding esports betting industry faces challenges in terms of integrity and industry standards due to its decentralized nature. This lack of regulation, coupled with the increasing popularity of esports betting and the interest shown by a significant portion of esports enthusiasts, makes the industry vulnerable to fraudulent betting activities.**

In the experience of Sportradar, some of the many risk factors specific to esports:

**Online competitions** prevent in-person oversight over players and their hardware, which naturally leads to the possibility of players using unauthorized software to cheat.

**Ringling or “smurfing”** is also a risk in online tournaments, where teams use a highly skilled player to secretly play on an alternate account to compete against less proficient opponents and gain a better chance of victory.

**Skins Betting Websites**, peer-to-peer parimutuel betting exchanges, are a significant risk factor. They use virtual ‘skins’ from games such as Counter-Strike and Dota in place of fiat currency, due to their

monetary value in the community. Given their unregulated nature, these sites are a popular method used by match-fixers to maximize potential profits.

**Parlay bets** are also a more significant risk for esports than most traditional sports, as the same team can play multiple matches in a day, and can therefore be complicit in the manipulation of multiple matches encompassed by a single parlay bet. The multiplier effect with parlay bets means extremely high profit potential, and stakes may be small enough to be inconspicuous when spread across multiple bookmakers.

**Low compensation** is also a major risk factor, as only the top esports players are generating enough income from salary, prize pools, and sponsorships to live comfortably.

**Age** is also a pressing issue, as most esports players transition into professional or semi-professional status as teenagers and retire before they are 30. The relatively young ages mean that players are often more vulnerable to peer pressure and the allure of illicit profits as fewer earning years mean they are more susceptible to corrupt approaches.





## TAL Case Study

**In 2022, Sportradar Integrity Services launched multiple investigations on behalf of Riot Games into players from the League of Legends Turkish Academy League (TAL) Spring and Summer splits of the Turkish Championship League in 2022. The allegations concerned match-fixing, betting-related violations and ‘ringing’ - where lower-ranked players gave access to a higher-ranked player to play on their behalf.**

The first investigation centred on matches occurring in the Spring split 2022, where it was alleged that players were intentionally losing matches, including ‘first blood/kill’ and placing bets on their own matches. On 30-May-2022, Riot Games found there was sufficient evidence to provisionally suspend eight players while the investigation continued.

A further suspicious match between Galakticos Academy and Istanbul Wild Cats Academy played on 21-Jul-2022 was confirmed after highly suspicious pre-match betting was observed for Istanbul Wild Cats Academy to lose the match. Seven more players were implicated in match-fixing and were suspected of being linked to the spring split case.

Approximately EUR 14,000 was placed on Istanbul Wild Cats Academy to lose, including singles and multiples bets. Galakticos Academy was an ‘underdog’ to the degree that they were five times less likely to win the match than Istanbul Wild Cats Academy, as implied by odds. As such, it is estimated that the total profits from the illicit betting were upwards of EUR 50,000.

It was discovered during the course of the investigation that three players from other teams within TAL and LVP SuperLiga second division were ringing, taking the places of three less experienced players from Galakticos Academy to increase their chances of winning.

Concerning additional information was identified by Sportradar regarding TAL, namely that there was a broader betting-related manipulation scheme within the league during the Spring and Summer splits of 2022, where players were actively engaging others to participate in ringing and match manipulation for monetary gain.

The investigation included extensive checks on every match in TAL throughout 2021 and 2022, including reviewing and analysing match footage, 19 interviews with four witnesses and 15 suspects, and the in-depth examination and analysis of key evidence and material.

The investigation ultimately led to 14 players being identified as being involved in violating Riot Games competitive rules. Riot Games issued warnings to two players and suspensions ranging from five months to five years, accumulating a total of over 27 years for the remaining 12 players. The suspension lengths imposed depended on several factors, including cooperation with investigators and the culpability of the player in terms of their level of involvement.



# RIOT GAMES INTERVIEW

**Could you outline the strategies and measures Riot Games has implemented to help combat the threat of match-fixing?**

Riot Games employs a comprehensive strategy to combat match-fixing, centered around four key pillars: (1) Regulations and Processes, (2) Investigations & Enforcement, (3) Prevention & Education, and (4) Transparency & Communication.

Our commitment to integrity is reflected in the Riot Games Esports Global Code of Conduct (the Code), publicly introduced in late 2023, which sets high standards for esports professionals. The Code addresses a wide range of topics, including match-fixing, gambling, and fantasy contests. Our efforts are also directed inwardly by having robust processes and ensuring that event staff, including referees, are appropriately trained.

In addressing match-fixing specifically, our collaboration with Sportradar plays a pivotal role. This partnership focuses on monitoring betting activities, conducting investigations, and developing dedicated educational content for esports professionals.

**What are the biggest challenges and obstacles Riot Games has faced in identifying and preventing match-fixing? How do you handle these challenges?**

Riot Games operates within a vast and diverse ecosystem, which in itself can be challenging to oversee. Additionally, some of our greatest challenges pertain to the online nature of our ecosystem and the use of emerging technologies. To tackle these challenges, we've strategically adapted our internal processes and forged external partnerships.

For example, we are able to navigate our extensive ecosystem thanks to the support of our local offices. While guided by Global standards and framework, the local offices play a crucial role in the execution of our programs. Their proximity, both competitively and culturally, enhances understanding of players, teams, and local communities, enabling swift action, which may be in-person when needed.

In addition, our various teams focus on countering evolving cheating methods and detecting "win-trading" (a synonym for match-fixing often done for sporting purposes), more often within ranked play such as solo queue or premier. Leveraging proprietary technology, notably through Vanguard for VALORANT, they actively mitigate the effectiveness of these cheats, safeguarding competitive integrity and bolstering our broader efforts against match-fixing.

**What role does education and awareness play in your fight against match-fixing? What tools does Riot Games use to educate players and other stakeholders about the risks and consequences of match-fixing?**

We believe in the value of education and awareness efforts as preventive measures. We currently conduct in-person integrity educational sessions with players and team staff competing in top tier leagues across our competitive regions, while also providing informational videos that professional players are required to watch. In addition to players and team staff, we also deliver in-person training to our referees to ensure that they operate with the highest standards of integrity.

To enhance education and awareness within our ecosystem, we are developing a comprehensive campaign to communicate on various topics, including match-fixing, betting & gambling and fantasy contests. While specific details are currently confidential, we are committed to improve the status quo by implementing more proactive measures to safeguard the integrity of our ecosystem - with a focus on communication and education.

**How does Riot Games utilize technology and data analytics to detect and prevent match-fixing? Are there any strategies or partnerships that have been particularly effective?**

Riot Games leverages technology to strengthen its integrity programs, particularly in the detection and prevention of match-fixing as well as betting-related violations. This is achieved through two key partnerships:

First, our collaboration with Sportradar's UFDS enables us to monitor over 25 leagues and international events globally. This partnership alerts us to any suspicious betting activity surrounding our games, providing reliable information that informs subsequent investigations and potential disciplinary actions.

Additionally, Riot Games partners with GRID to deliver real-time official esports data for League of Legends Esports and VALORANT Champions Tour. This partnership ensures the availability of reliable, accurate, and secure esports data, crucial for fostering a trustworthy environment and reinforcing our overall integrity program.

**How does Riot Games work with other integrity organisations and safeguarding institutions?**

Riot Games primarily focuses its outreach on law enforcement agencies, governmental institutions, and non-governmental organizations with a stake in esports or sports.

Cultivating strong relationships with national and international law enforcement agencies is mutually advantageous. Collaborating on topics like international legal analysis, intelligence gathering, and information sharing ensures that we stay abreast of advancements that strengthen our esports ecosystem, while complying with local laws at a global level. Furthermore, our outreach efforts ensure our perspective is effectively communicated to governmental and non-governmental institutions, preventing counterproductive initiatives or decisions within esports.



**Audrey Cech**  
Global Head of Rules & Compliance



# OUTLOOK AND PREDICTIONS (2024 & BEYOND)

- ▶ A similar pattern of suspicious match numbers witnessed in 2023 is likely to persist into 2024. Given the continuing economic uncertainties – at both a broad global level and within many nations – and their resultant impact on sports teams and athletes, these factors will likely play a significant role in influencing sports integrity. Additionally, the ongoing lack of robust integrity measures – including rules and regulations – in many worldwide sports organizations, coupled with insufficient investigative efforts and resources in areas known for match-fixing, will likely contribute to the continuation of these trends. Preventative measures such as education also work and help to maximise the chance of preventing and deterring match manipulations and other integrity breaches, but more needs to be done globally in this area.
- ▶ Soccer is anticipated to maintain its position as the sport with the most suspicious matches, as seen in previous years. Similarly, basketball is likely to continue as the sport with the second-highest number of suspicious matches worldwide, reflecting a consistent pattern over the past few years. There were almost three times as many suspicious basketball matches as the next closest sport in 2023, and such a gap is unlikely to decrease in a single year given the transnational nature of issues at the present time.
- ▶ Geographically, Europe is expected to remain the region with the highest incidence of suspect matches, while Asia is likely to retain its position as the continent with the second-largest number of suspicious matches, as significant levels of match-fixing have been established over a long period of time in each continent. Moreover, the frequency of match-fixing incidents in Africa is expected to keep rising, following the pattern observed in recent years, with suspicious matches increasing annually for three straight years.
- ▶ The use of account-level betting data, augmented by artificial intelligence and the growing Sportradar Integrity Exchange network, will become more prevalent and sophisticated in detecting match-fixing activities. Some forms of match manipulation are not easily detectable in conventional, major betting markets, as those involved in match-fixing try to conceal their actions. Thus, the use of account-level data, combined with artificial intelligence, is crucial for detection. This technology is expected to become even more critical in uncovering match manipulation, and is expected to further prove its worth in 2024 and beyond.
- ▶ The issue of athletes, players, and match officials – especially those nearing the end of their careers – being tempted into match-fixing activities will remain a significant challenge. The allure of additional income as their main earnings from sport decreases should continue to present a risk, with it likely that some individuals from sport will continue getting involved in organizing match-fixing or acting as facilitators for syndicates.

These predictions for 2024, while based on current trends, should be viewed with an understanding that unforeseen factors and developments in the sporting and economic worlds could alter the trajectory of these issues.



# INTEGRITY EXPLAINED

## What is match-fixing?

Global sports bodies and lawmakers define what constitutes match-fixing in different ways. Perhaps the most widely accepted definition comes from the Macolin Convention, which states that the ‘manipulation of sport competitions means an intentional arrangement, act or omission aimed at an improper alteration of the result or the course of a sport competition in order to remove all or part of the unpredictable nature of the aforementioned sport competition with a view to obtaining an undue advantage for oneself or for others’<sup>5</sup>. Athletes, coaches, match officials and club management can all be guilty of this offence.

There are different types of match-fixing. Fixed matches broadly fall into one of two categories: either for ‘betting purposes’ or ‘sporting reasons’. The two are not mutually exclusive, however. They are often interlinked, as evidence from match-fixing investigations has shown. Fixes designed to achieve a sporting outcome often turn into a betting fix, as those with inside knowledge of this attempt to profit from it financially.

In this document we frequently refer to ‘suspicious matches’. Included within this definition are a) ‘escalated matches’, which are those that display overwhelming evidence of match-fixing, and b) ‘match intelligence summaries’, which are those that display credible indications of match-fixing. These statuses are based on and driven by betting data. Please note that Sportradar maintains a high threshold for a match to be classified as suspicious.

## What are the risks?

The impact of match-fixing is widespread. If the integrity of a competition is called into question, then its reputation is harmed significantly, sometimes irreparably. This can have serious knock-on effects on fan participation, corporate sponsorship and media coverage. These all form the fabric for sporting competitions’ relevance and popularity, and they are also broadly the basis for all revenue generation. Some of the main risks from match-fixing are:

- ▶ Money made through betting fraud goes to criminals, and can be used to finance other criminal activities
- ▶ Athletes who are involved can see their careers derailed, if not ruined
- ▶ Fans lose confidence in the sporting product and walk away
- ▶ Finances of the sport are damaged through the loss of sponsorship and media interest

<sup>5</sup> <https://www.coe.int/en/web/sport/match-fixing>



## Sportradar Integrity Services: What we do

Sportradar Integrity Services is dedicated to protecting sport from a broad range of integrity threats, including competition manipulation (match-fixing), doping and other forms of fraud and corruption. We are committed to supporting our sport, government, and law enforcement partners worldwide in the fight to keep global sport clean. Our holistic, technology-enabled and intelligence and data-fuelled services are focused on preventing, detecting and investigating integrity threats across our core service pillars:

**Preventing match-fixing:** A key service offering is our proactive work to help our partners implement preventative measures. This includes the digital and in-person education initiatives delivered by our Education & Prevention Services team, which develops the knowledge of athletes, coaches, and other sporting stakeholders. In addition, a tiered due diligence model can be implemented to identify risks presented by individuals such as players, coaches and match officials or companies such as sponsors and investors, ensuring that our partners can implement effective mitigations to reduce the likelihood or susceptibility to match-fixing occurring.

**Detecting match-fixing:** This we do through our bet monitoring and detection technology, driven by the Universal Fraud Detection System (UFDS).

**Investigating match-fixing:** To help build comprehensive cases, our Intelligence & Investigations team support global sports bodies and law enforcement to gather intelligence and evidence. A wide range of investigative approaches are available to support our partners, including the profiling of Persons of Interest (POIs), enhanced Open Source Intelligence (OSINT) investigations, discreet Human Intelligence (HUMINT) enquiries, digital forensic extraction and analysis, and investigative interviews. The appropriate and proportionate methods are deployed to seek the optimal outcome for the case.

**Compliance, Risk & Governance:** We offer a tiered due diligence model to support our partners in

identifying, managing and mitigating potential threats to the integrity or reputation of their organisation or competition. Our due diligence services are used from the top to bottom of an organisation, including eligibility checks on high-profile or electoral positions, bulk integrity checks on large groups or athletes, or enhanced due diligence on sponsors seeking to align themselves with the organisation. Our tiered approach allows our partners to select the research aligned with their requirements and risk appetite.

**Anti-Doping:** Through a broad range of investigative methods, we assist our partners, including National Anti-Doping Organisations (NADOs), federations and law enforcement agencies, in identifying and disrupting doping networks and investigating Anti-Doping Rule Violations (ADRVs) across all sports. In addition, our anti-doping experts conduct risk assessments to drive an intelligence-led approach to testing programmes deployed by our partners.

**Safe Sport:** With a focus on protecting athletes and players worldwide, our Safe Sport service puts the safety, security and wellbeing of athletes at the forefront of our approach to combating the issue of online abuse. Digital integrity and athlete wellbeing education programmes help athletes protect themselves online and understand the support mechanisms available to them. Through our partnership with Arwen AI, we can offer an AI-driven service that scans social media channels for toxic and abusive comments, messages, spam, and bots. Flagged comments are automatically hidden in under a second, protecting the intended targets and creating a more positive online environment. Our Intelligence & Investigations team conduct complex investigations to identify the individuals behind the abuse, enabling offline consequences for online actions. Crucially, our Safe Sport service protects the victims, who no longer have to receive and report cases of online abuse, protecting their wellbeing and allowing them to focus on their role in the sport.

## What is the UFDS?

The UFDS is Sportradar's proprietary bet monitoring system and is the most effective tool for monitoring and detecting suspicious betting behaviours. It is relied upon by the widest range of global sports bodies, and is offered at no financial charge to any sports federation or league that wants to use it.

### Data Gathering Methodology

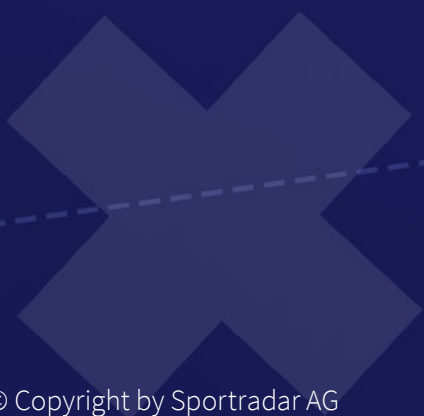
- ▶ We monitor over 850,000 matches across 70+ different sports annually, with over 170 integrity partners putting their trust in the UFDS.
- ▶ Over 30 billion odds changes from across over 600 global betting operators are filtered through the UFDS each year, covering the regulated, unregulated and grey betting markets, ensuring that anomalous patterns can be detected in real time across both pre-match and live betting markets, with the latter compared against purpose built algorithmic models.
- ▶ As well as monitoring macro-level betting market movements, the UFDS is also supported by another key information stream; namely account-level betting data. This aggregated data comes from over 400 global bookmakers and brands and has already been used to confirm otherwise undetectable micro-level suspicious betting activity.
- ▶ Another important source to support UFDS monitoring efforts is the Sportradar Integrity Exchange; our network launched in 2022 which enables valuable two-way communication between global betting operators and Sportradar Integrity Services for the sharing and reporting of irregular betting activity, with confidentiality upheld.





## UFDS Monitoring Process

- ▶ The AI-powered UFDS operates via a two-level approach achieved through the work of a technologically advanced system and global team of integrity analysts.
- ▶ Betting data is firstly filtered in real-time by algorithms and mathematical models built specifically for various sports. The UFDS then generates alerts when betting activity passes a pre-determined threshold, which is competition specific based on estimated liquidity of markets and historical odds movements, informed by data science. In recent years, the application of Artificial Intelligence (AI) – incorporating account-level betting data from operators – has played an increasing role during this phase of the detection process.
- ▶ When the UFDS generates alerts reflecting notable betting activity in an individual market, our team of skilled integrity analysts are responsible for investigating alerts on a real-time basis, using their expertise to identify potentially suspicious activity in betting markets. It is their task to analyse the betting activity and rate it as ‘not suspicious’ or ‘potentially suspicious’. In the former case, no further action is taken. In the latter case, the betting activity defined as ‘potentially suspicious’ will be subject to a thorough review by the team with all context and potential factors considered.
- ▶ When a match is classified as suspicious, official monitoring partners are informed, with a suspicious betting report provided, outlining affected betting markets and key concerns. These reports have been proven to initiate and support successful sporting and criminal proceedings around the world time and time again over the past two decades.
- ▶ While official monitoring in a complete and systematic way is only provided for UFDS partners, Sportradar Integrity Services deploys the UFDS to proactively monitor a large amount of global sport it is not officially covering already for partners and has a vast coverage of the market from a bet monitoring standpoint. A significant number of suspicious matches from these unofficially monitored sporting events are captured in the suspicious match data provided within this report, but the nature of this unofficial monitoring means it does not present a full and complete picture.



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