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# BETTING CORRUPTION AND MATCH-FIXING IN 2022

A review by Sportradar Integrity Services

March 2023



sp**o**rttradar



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# FOREWORD

For the first time since Sportradar Integrity Services' Universal Fraud Detection System (UFDS) launched in 2005, the number of suspicious matches detected has passed the 1,000 mark in a calendar year. During 2022, we detected 1,212 suspicious matches in 12 different sports spanning 92 countries. This is an increase of 307 matches since 2021. Our bet-monitoring system now analyses more than 850,000 matches across 70-plus sports globally.

In publishing this, our second annual report, we can make comparisons against last year's report and spot emerging trends in match-fixing. Full details will be given on the following pages, but in summary, compared to 2021, 2022's data showed a small percentage growth in suspicious match frequency across all sport (+0.03% to 0.21% overall), with basketball (+0.31% to 0.51%) and soccer (+0.09% to 0.59%) seeing the biggest growth year-on-year. While this represents a very small percentage of the total number of sporting events played on an annual basis – with the vast majority free from betting corruption – the data nonetheless shows the constant threat of match-fixing globally. Sport has been no exception to feeling the effects of economic issues that have afflicted much of the world in 2022, and outside of the upper echelons, many competitions, teams and athletes have faced increasing financial pressures which have undoubtedly influenced this trend.

Artificial Intelligence (AI), integrated into our systems since 2018, is helping to drive the detection of suspicious matches as it enables greater numbers of matches and a growing number of data points within each one to be analysed. The AI now tracks more than 30 billion odds changes from in excess of 600 betting operators per year. Additionally, AI is enabling us to access even deeper insights by monitoring anonymized account level or customer level data, aggregated from global bookmakers, to gain insight into otherwise undetectable micro-level suspicious betting activity. The technology also learns as it goes along, meaning it will only get smarter and help us to detect more and newer types of match-fixing in future.

The growing adoption of the UFDS by the world of sport means that more than 160 sports organisations and state authorities now utilise the system. Since offering the service free-of-charge to any sports federation or league worldwide in late 2021, 90 new sport and state authority partners have signed up. This includes growing our cooperation with national platforms, gaming regulators and government bodies in the spirit of the Macolin Convention, and we have been working with the national platform representatives for Estonia (ESTCIS), Finland (FINCIS), Sweden (Spelinspektionen), and Canada (CCES), among others, demonstrating how effective bet monitoring can play a critical role at a national, multi-sport level.



The launch of the Sportradar Integrity Exchange in April 2022 is another key part of our anti-match-fixing efforts. It is a global network of betting operators who proactively share suspicious betting information, which can help to identify more suspicious matches, and ultimately help to initiate the investigative process. So far, 37 betting operators have joined, and the network has already flagged more than 300 matches across 11 sports to Sportradar, and we anticipate it will become the world's largest integrity network of betting operators in the years ahead.

Our multi-layered approach to sports integrity is paying off, as 2022 saw a record number of 169 sporting and criminal sanctions delivered which were supported by Sportradar Integrity Services data and reports. It is envisaged that many more successes in the anti-match-fixing fight will be possible as the AI-driven UFDS continues to

evolve, and the Sportradar Integrity Exchange grows. Yet for the long-term anti-match-fixing outlook to significantly improve, there needs to be a greater emphasis placed on integrity from sporting stakeholders, as there remains a significant lack of investment and allocation of resources. We offer bet monitoring free-of-charge but sports and governments need to invest in preventative measures such as education, and proactive and reactive intelligence collection – including carrying out end-to-end investigations and the acquisition of evidence that can be used in disciplinary and criminal proceedings – that will ultimately create a strong deterrent. We are optimistic however that over a multi-year period, there can be a greater understanding of integrity risks and how to minimise them, and we are proud to support the overall aim of a cleaner, fairer world of sport.



**Andreas Krannich**

Managing Director Sportradar Integrity Services





# EXECUTIVE SUMMARY

1. In 2022, Sportradar Integrity Services detected a record number of suspicious matches through the UFDS, with the 1,000-matches mark breached for the first time. In total, 1,212 suspicious matches were detected across 12 sports, representing a 34% increase on the year prior. The issue was truly global, with suspicious matches detected in 92 countries across five continents, and these figures serve as a stark reminder that match-fixing remains a constant and growing threat across the world of sport. Still, the data continues to show that the majority of sporting events are free from match-fixing (over 99.5%), and this applies to different sports across the spectrum, with no single sport having a suspicious match ratio greater than 1%.
2. In term of sports affected, soccer continued to have the highest number of suspicious matches (775), but one of the key trends of 2022 was the sharp rise in suspicious basketball matches (220), which increased by approximately 250% compared to 2021. Overall, across all sports, the suspected manipulation rate stood at one in every 476 matches – an increase compared to the manipulation rate of one in every 545 matches in 2021 – demonstrating that even while the vast majority of sporting events are free from betting corruption, the threat of match-fixing is still plaguing sport globally, and spreading into new countries and competitions.
3. In terms of regions affected, Europe continues to see the highest number of suspicious matches (630) followed by Asia (240) and South America (225). Compared to 2021, the number of suspicious matches has risen in each region except North America and Oceania. The biggest rise in percentage terms was in Africa (+82%) followed by South America (+72%), showing that match-fixing continues to grow substantially in certain regions where those responsible for match manipulation have enjoyed success in recent years. Indeed, nearly a half of all suspicious matches (47%) were played in the 10 countries most affected by match-fixing during 2022.
4. Within soccer, the trend from 2021 of lower levels of competitions being significantly affected has continued. In 2022, 52% of suspicious soccer matches came from the third tier or lower, including regional leagues and youth competitions. A similar trend emerged in basketball in 2022, where 50% of suspicious domestic games came from the second tier of competition or lower, including amateur leagues. These growing issues at lower levels of basketball indicate that like soccer, a lack of robust integrity protections are playing a part, and making them vulnerable targets for match-fixers to exploit.

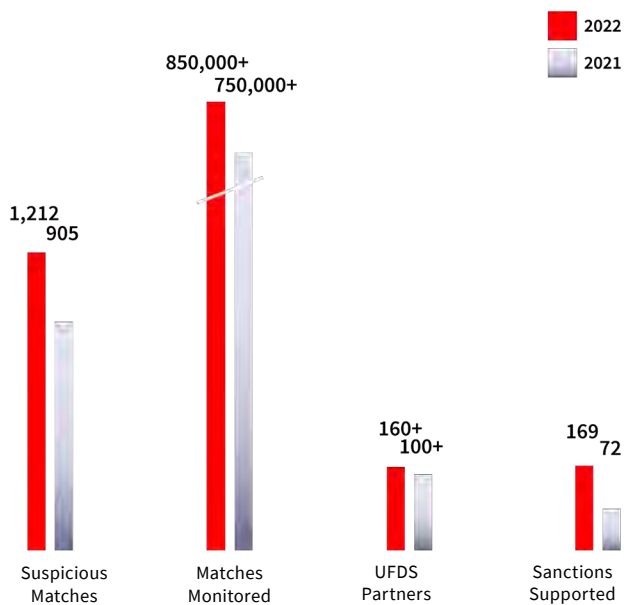




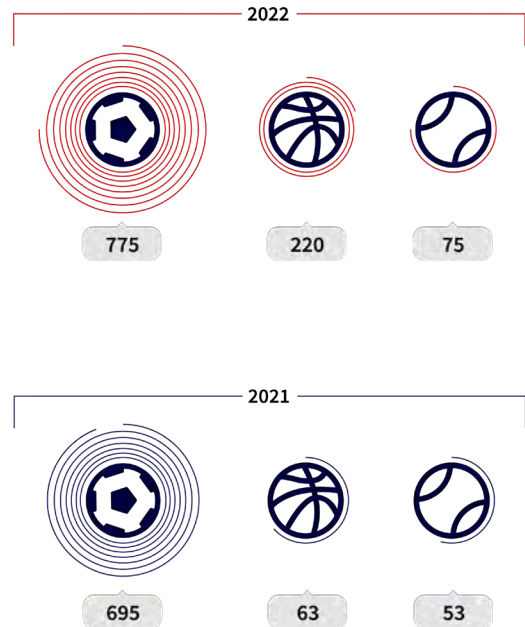
5. The application of Artificial Intelligence (AI) – incorporating account level betting data from operators – is helping to detect competition manipulation and has continued to play an increasing role. The capability of this innovation in sports-betting fraud detection is proven by 2022's data, where in total, 51% of the 1,212 suspicious matches were detected in part using account-level betting data, and in three sports this data was pivotal in identifying most (table tennis – 98%) or all (tennis & handball - 100%) of suspicious matches. This data and technology will soon become the benchmark for sports-betting fraud detection, if it isn't already.

6. Stakeholders across the world of sport are fighting back however, and in 2022, Sportradar Integrity Services data and reports helped to launch and/or support the process which led to a record 169 sporting or criminal sanctions against those deemed guilty of cheating sport and breaking the law. We are always on hand to support our sporting partners and law enforcement in bringing to justice those responsible for match-fixing, and this need is as great as ever given the historic rise in suspicious match numbers we have seen this year.

### Year-on-year comparison of key statistics



### Sports by suspicious matches



It should be noted that the figures and date 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

**During 2022, Sportradar Integrity Services detected 1,212 suspicious matches in 12 different sports, spanning 92 countries.**

Throughout 2022, match-fixing continued to spread into new tournaments and territories, while maintaining its hold over many sports competitions that have historically been affected by match-fixing. In total, 2022 saw the highest number of suspicious matches ever recorded in Sportradar's UFDS and

marked a 34% increase on 2021. It also represented the first time suspicious match numbers had exceeded the 1,000-match mark in a calendar year. These record numbers showcase the constant and growing threat of match-fixing across the world of sport, and highlight the vulnerability of global sporting events to betting-related manipulation. Overall, 1,188 matches came from men's sporting events, while 24 came from women's sporting events.

## Suspicious Matches by Region



While the number of suspicious matches has risen in each region except North America and Oceania compared to 2021, the biggest rise in percentage terms was in Africa (+82%) followed by South America (+72%). This shows that match-fixing continues to grow substantially in certain regions, with those orchestrating manipulation continuing to target areas where they have enjoyed success in recent years.

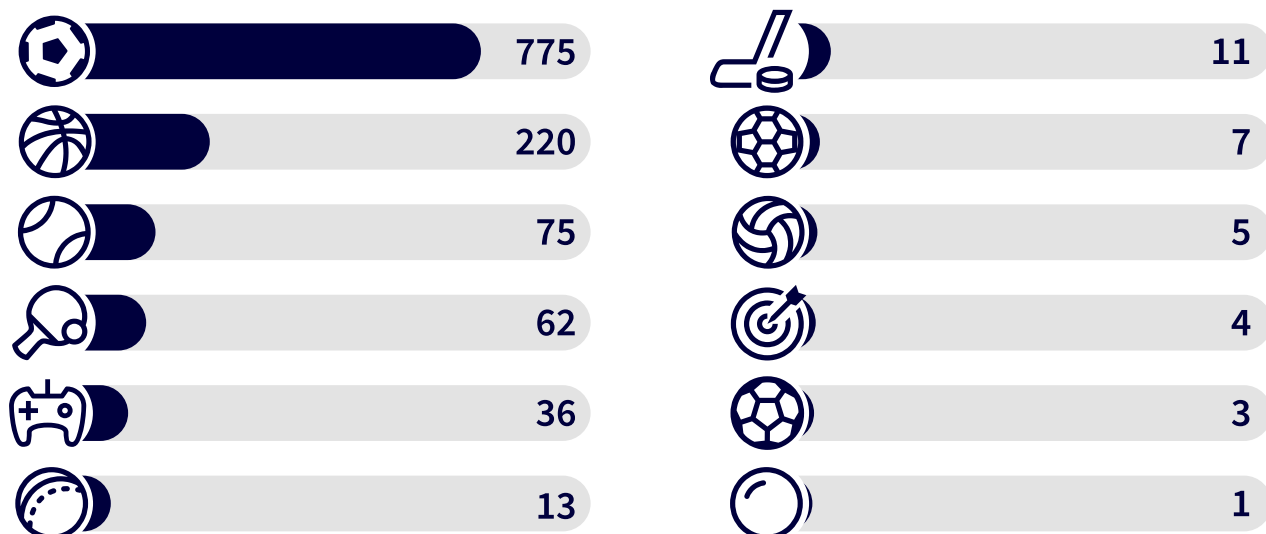


## Top Countries by Suspicious Matches



Nearly a half of all suspicious matches were played in 10 countries, with these countries most affected by match-fixing accounting for 47% of the total figure. Soccer accounted for 71.5% of the suspicious matches in these 10 countries, while Basketball represented 17.5%, Table Tennis 6%, and Handball, Ice Hockey, Tennis and Volleyball together making up the remaining 5%.

## Sports with Suspicious Matches



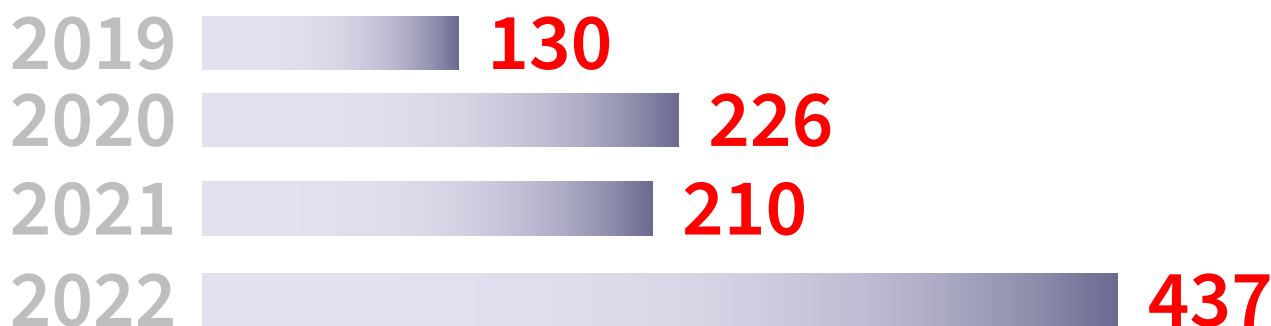
In 2022, approximately 64% of the total suspicious matches occurred in soccer. While this continues to correlate with expectations given soccer's popularity globally and popularity as a betting medium, this represents a decrease in percentage terms from 2021, which saw approximately 77% of suspicious matches globally in soccer. However, this can be attributed to rising numbers in other sports, and 2022 actually saw an increase in the actual number of suspicious soccer matches detected (+81) year-on-year.

Basketball and table tennis are two sports which have shown a sharp rise in suspicious match numbers in 2022. There was a year-on-year increase of +157 suspicious matches in basketball – which is reviewed in more detail later in this report – while the figure for table tennis was +51 suspicious

matches, albeit this covered a very high volume of total matches played, with only 0.04% classified as suspicious in total. Although a number of sports continue to display relatively low numbers of suspicious matches, 13 suspicious cricket matches is still the highest annual figure recorded by Sportradar Integrity Services, and handball and futsal also recorded their highest ever number of suspicious matches.

There is every chance that this trend of increasing suspicious match numbers outside of soccer continues in the years ahead. Indeed, in just four years we have seen significant growth in suspicious match numbers in sports outside of soccer, from 130 across nine sports in 2019, to 437 across 11 sports in 2022 – **an increase of 236%.**

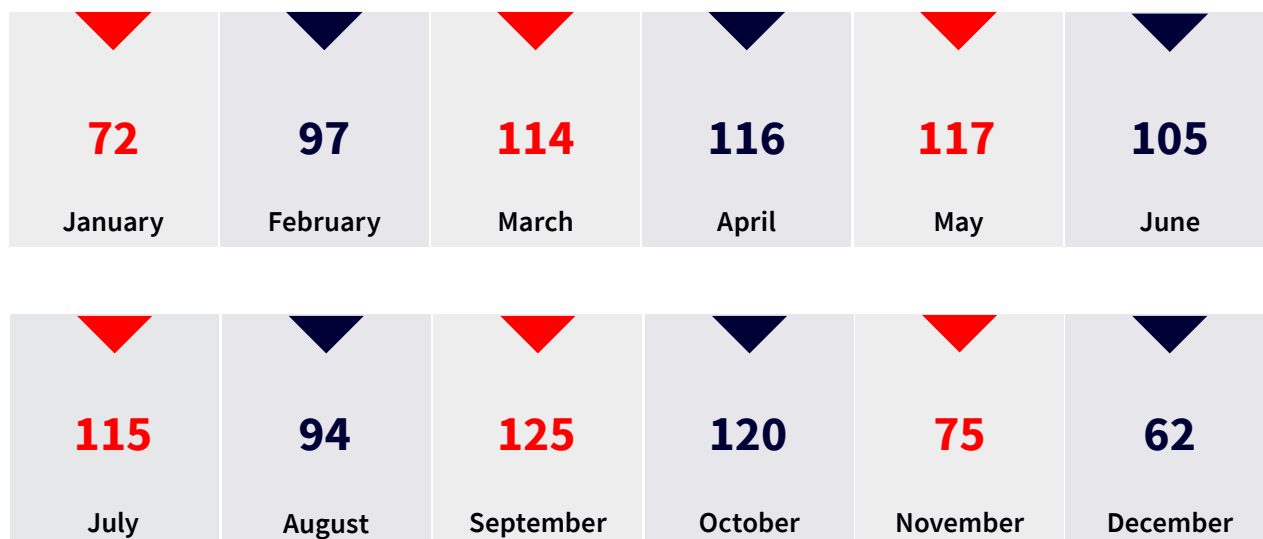
### Suspicious match numbers outside of soccer





## Suspicious Matches by Month/Day

The months of September (125) and October (120) saw the highest number of suspicious matches, much the same as in 2021. Meanwhile, over 100 suspicious matches were also recorded each month in the period March through to July.



This again strongly aligns with the traditional soccer calendar, though to a slightly lesser extent than in 2021. This is directly related to soccer representing a lower percentage of suspicious matches in 2022, with other sports such as basketball – which represents a higher number of suspicious matches in 2022 – having a number of suspicious fixtures during months where there is less soccer globally, owing to a less-uniform sporting calendar. Meanwhile, November (75) and December (62) were two of the three months with the lowest suspicious match

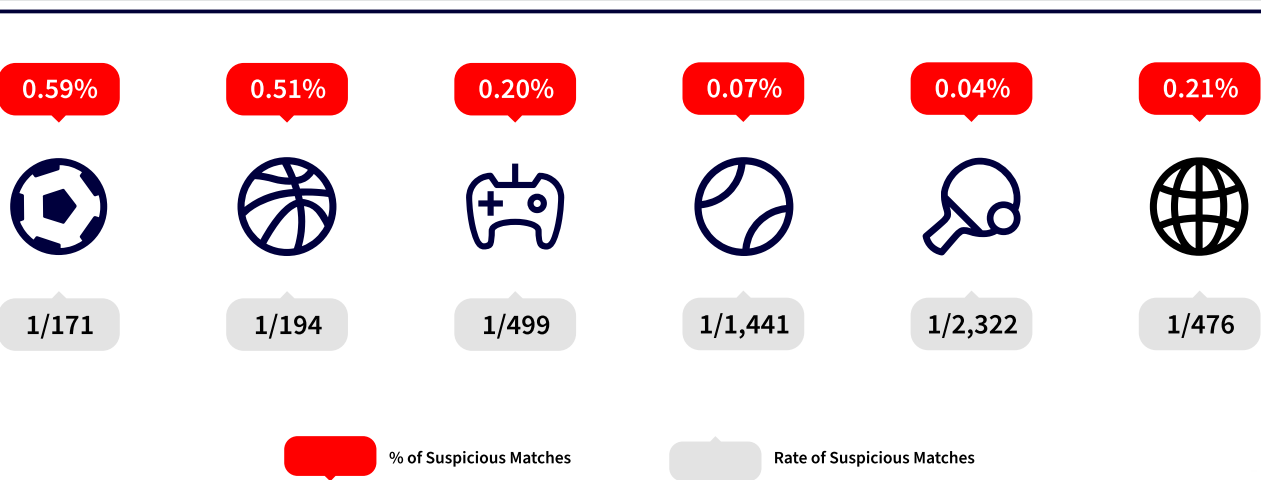
numbers, due in part to the pushing forward of various winter breaks in soccer, because of the FIFA World Cup.

Regarding the days of the week that suspicious matches were played on, Sunday (21.5%) and Saturday (19.5%) saw the highest numbers of suspicious matches, followed by Wednesday (16.5%). As with 2021, this follows the general sporting schedule, and is a distribution expected by the Integrity Services.

# Frequency of Suspicious Matches

Prior to the launch of the UFDS as a free service in 2021, Sportradar Integrity Services monitored a high number of matches unofficially, whereas now, as of 2022, the majority of our monitoring is conducted for our UFDS partners, so these numbers are as reflective of the true extent of match-fixing as any prior time in our history.

Compared to 2021, there was a small growth in suspicious match frequency across all sport (+0.03%), with basketball (+0.31%) and soccer (+0.09%) seeing the biggest growth year-on-year. These numbers continue to show that the vast majority of sporting events are free from match-fixing (over 99.5%), and this applies to different



\*Frequency of match manipulation per sport monitored by Sportradar Integrity Services

Reviewing the top-five sports<sup>1</sup> by suspicious-match frequency in 2022, soccer accounted for the most, at a rate of one in every 171 matches. This was closely followed by basketball at a rate of one in every 194 matches, and then esports<sup>2</sup> at one in every 499 matches, with Tennis and Table Tennis at one in every 1,441 and 2,322 matches respectively. Overall, across all sports, the suspected manipulation rate is one in every 476 matches.

sports across the spectrum, with no single sport having a suspicious match ratio greater than 1%. However, match-fixing incidents are still spreading into new areas and competitions, and each suspicious match detected is a blow to clean sport and a major threat to the competition it involves. This is why Sportradar remains steadfastly committed to offering the UFDS free of charge to all global sports federations and leagues, in order to ensure that all sporting events are monitored and protected in the same way.

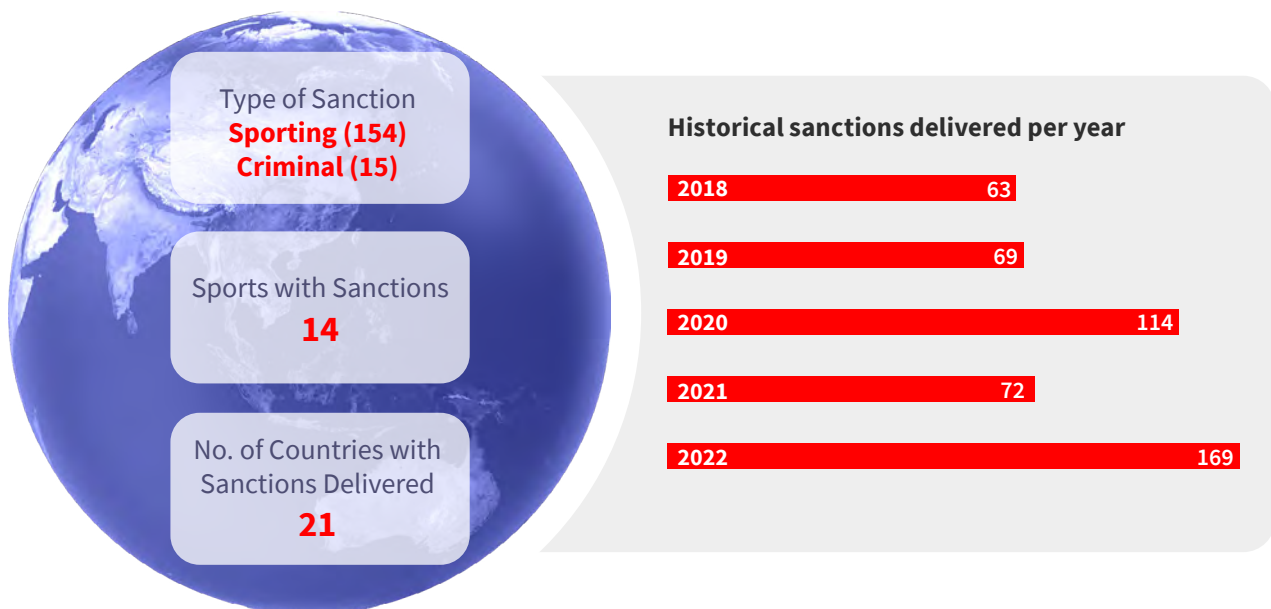
<sup>1</sup> Based on official UFDS monitoring for partners and additional unofficial monitoring  
<sup>2</sup> Traditional esports titles including Counter-Strike:Global Offensive, and Dota 2, but excluding sports titles covering esoccer and ebasketball



# SANCTIONS SUPPORTED BY SPORTRADAR INTEGRITY SERVICES

During the past 18 years, Sportradar Integrity Services have detected over 7,900 suspicious matches across 15 different sports. Both UFDS data and reports, and the work of our Intelligence & Investigation Services, has helped result in criminal and sporting sanctions being delivered globally, with the total number of combined sporting and criminal sanctions supported now standing at over 770 all-time.

While the origin of some sanctions pre-date the year in which they were handed down – due to the complexity of some cases taking multiple years to resolve – the significance of the high number of sanctions in 2022, and the clear growing trend of positive results against those cheating sport are clear to see, and demonstrate that the fight against match-fixing is working.



In 2022, a record 169 sanctions spanning 21 different countries utilising Sportradar Integrity Services data were imposed by sport federations or criminal courts on those deemed guilty of cheating sport and breaking the law. In total, 14 different sports had an individual or team face a sanction, with most of these occurring in soccer, followed by esports, snooker, tennis, cricket, and nine others. While the majority of these related to match-fixing incidents, several sanctions were also delivered against those found guilty of doping, helped by Sportradar evidence.

# THE EVOLUTION OF SPORTRADAR'S BET MONITORING

## Applied AI in Sporting Fraud Detection

The best defence against the burgeoning threat of match-fixing is further investment in technology. With sports data continuing to evolve and expand across the entire landscape, and betting on sports increasing in popularity with the growth of new markets, the application of artificial intelligence in identifying match manipulation is paramount.

Sportradar's UFDS has been utilising this technology successfully since 2018, leading to an

increase in the number of matches monitored, detected, and ultimately reported to the respective sports federations and law enforcement. Most importantly, it has enabled new methods of match-fixing to be caught and flagged through a significant increase in the amount of data processed for each match.

The basis for this is the addition of extensive account-level betting data to the monitoring process.

## What Is Account-Level Betting Data?

Account-level or customer level betting data is that sourced directly from bookmakers, outlining a full account of betting stakes placed on each selection in each individual market across a particular sporting event. The UFDS detection process includes a stream of aggregated data from over 400 global bookmakers and brands, helping to confirm otherwise undetectable micro-level suspicious betting activity.

Our data models are now combining odds data from bookmakers, account-level betting data from +16.5 million bet tickets per day on average, as well contextualising information from the sports event itself, to identify and predict various levels of suspicious activity – all in real-time.

As a result, over 500 data points per match are being processed several times at different intervals, from the opening of pre-match markets to when the full-time whistle is blown, or the winning shot is hit. Once all markets are settled, the model

processes the complete dataset again and flags any potentially suspicious activity to our team of betting integrity experts.

The capability of this innovation in sports-betting fraud detection is proven by 2022's data – over 1,200 suspicious matches were detected and reported, a record number for a calendar year since the inception of the UFDS. In total, 51% of the 1,212 suspicious matches in 2022 were detected in part using account-level betting data, and in three sports this data was pivotal in identifying most (table tennis – 98%) or all (tennis & handball - 100%) of suspicious matches.

Perhaps of most significance, the technology will only improve as it begins to consume, process, and learn from more and more matches in the years ahead.





## Key Stats About UFDS' AI Technology



**2** machine-learning  
models in use  
operationally



**500+** data points  
processed per event



**141** matches uniquely  
flagged by AI that were  
subject to further review



**438** suspicious matches  
identified by AI in 2022,  
using a high-threshold  
approach

To demonstrate the importance of account-level betting data to the bet monitoring and detection process, two real-life case studies are provided below:

### Case Study 1

- ▶ A tennis match was highlighted by our AI as being potentially concerning from an integrity perspective.
- ▶ This automated alert was based on 70 different variables, predominantly focused on analysis of account level betting data from over 400 different betting operators.
- ▶ This analysis identified a number of concerning trends, with the greatest level of suspicion related to the number of high liability tickets recorded at account-monitored operators.
- ▶ After a thorough review by an expert team of analysts, the match was ultimately deemed to be suspicious in nature due to overwhelmingly one-sided betting for a doubles pairing to lose the first set of a match.
- ▶ This disproportionate betting can be demonstrated by the fact that nearly the entire recorded turnover (99%) in the 1st set winner market was for this outcome.
- ▶ A report was subsequently prepared for the relevant partner outlining the key areas of suspicion to support any further investigation.



### Case Study 2

- ▶ A soccer match in Europe was highlighted by our AI due to an irregular distribution of staking data at account-monitored operators.
- ▶ This data was taken under review by our team of analysts, and it showed that the amount bet on a red card being shown accounted for 13% of all stakes on the match.
- ▶ This was highly disproportionate compared to the long-term trend of less than 0.4% of stakes being bet for a red card in this league.
- ▶ The match was graded as suspicious with a report prepared for the relevant partner, outlining all the elements of suspicion and areas to help inform further investigation.



These cases are not standalone, and this technology will soon become the benchmark for sports-betting fraud detection, if it isn't already.



# SPORTRADAR INTEGRITY EXCHANGE: THE STORY SO FAR

The Sportradar Integrity Exchange (SIE) was launched in April 2022, with a mission to increase the involvement of betting operators in the fight against match-fixing. It is completely free-of-charge for operators to join by signing a memorandum of understanding, and it provides them with tools to help protect their business from suspicious betting. The suspicious betting reported by these operators can help to provide the evidence to launch investigations and build the most robust cases against malicious actors.

## How it works

In a two-way information exchange with Sportradar Integrity Services experts, betting activity flagged by SIE members and partners opens a communication channel where data and analysis can be shared on potentially suspicious sporting events. Operators are also provided with regular

reporting and data-driven insights to help inform their trading behaviour and offering. Further educational resources are made available to operators, so that their teams gain access to the multi-decade experience of the Integrity Services, in order to enhance their understanding of the global match-fixing landscape.

## Numbers so far

With the foundation for large-scale cooperation firmly in-place, the SIE has now grown to 37 betting operators, conducting business in over 40 countries directly, with many more from B2B operations. This represents a wide cross-section of the betting industry in nearly every major market where suspicious betting occurs. Nearly all countries in South America are now covered, in addition to half of Europe and a large portion of Africa.



## Members & Partners of the SIE



Across 2022, there were over 300 matches flagged by betting operators to the SIE in 11 sports. After examination, over 100 of these matches were deemed to be suspicious in nature by the Integrity Services and reported to our league, federation, national platform, and law enforcement partners. Soccer had the most matches reported by operators with over 100, in-line with general trends on suspicious activity, followed by Table Tennis and Tennis.

### Successes

The information on these matches has already been used in a significant number of instances alongside the UFDS to help identify suspicious matches, and subsequent reporting to Integrity Services partners has helped to successfully launch investigations and bring sanctions against suspicious actors. For instance, a European Counter-Strike team was banned by a tournament organizer after information from the

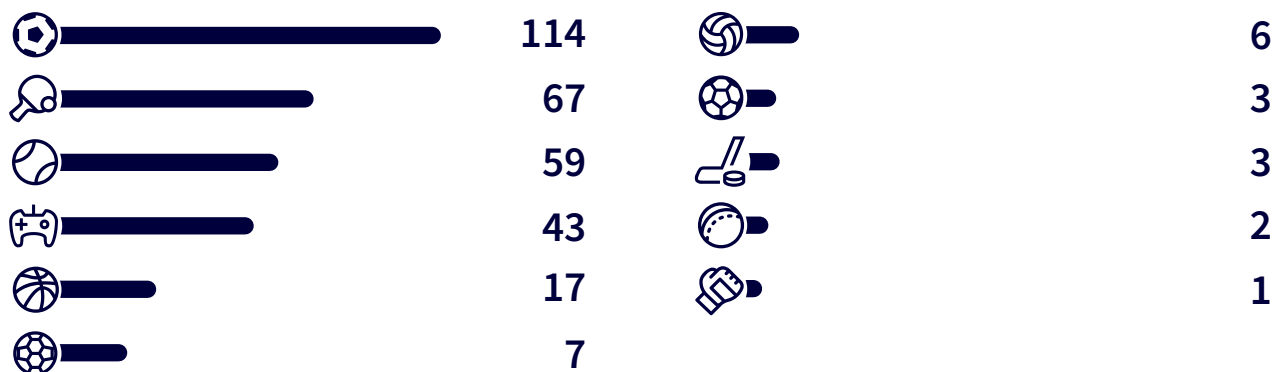
Integrity Exchange was detailed in UFDS suspicious reporting. Elsewhere, active investigations are also currently underway in MMA, soccer, and basketball using information from these operators, highlighting the immediate impact of the SIE in just a short time.

In addition, suspicious betting reported from operators has helped strengthen risk management protocols, by affecting profit-potential for corrupt actors by removing certain teams and athletes from the betting offer. This has helped protect sport from these activities and the betting industry from significant losses.

### Outlook

Sportradar are proud of the feedback the SIE initiative has received from betting operators across the world. The network is already having a positive impact on the integrity of sport, and will go from strength-to-strength as it expands in the months and years ahead.

## Number of matches reported to SIE

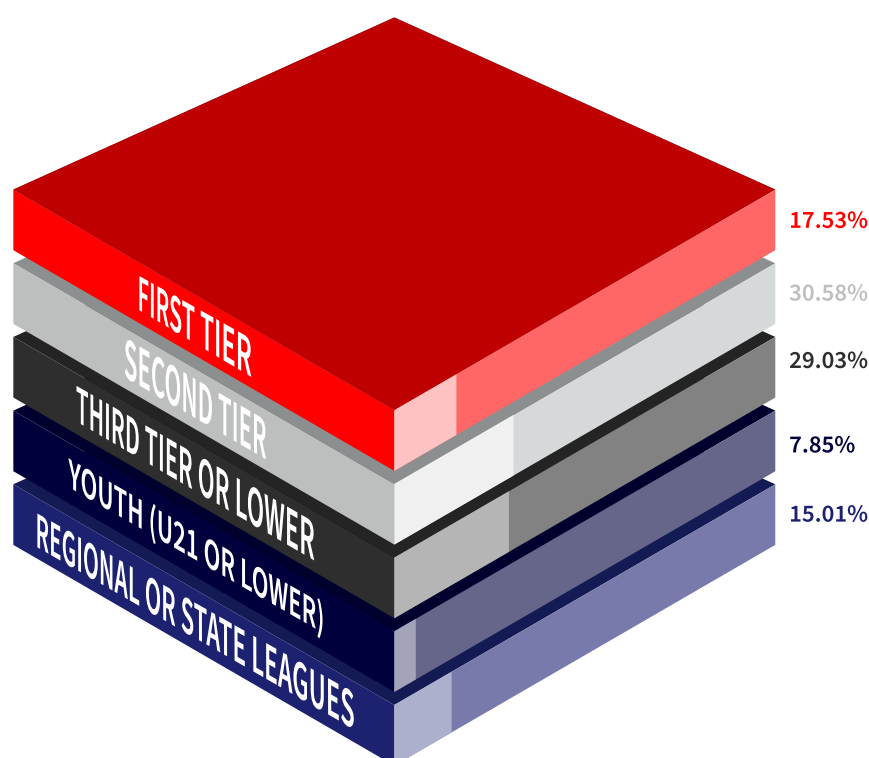


# IN DEPTH: SOCCER TRENDS

## Levels of Competitions Targeted

2022 continued to see fixtures outside of the top two tiers of domestic soccer heavily targeted for manipulation. This counters the historic global trend, where manipulation had predominantly affected the top two tiers, and most specifically the second tier, though it is consistent with the trend witnessed in 2021. Indeed, in many countries the first tier of national domestic competition is not a viable option for match-fixers to realistically target, as higher wages for players act as a built-in deterrent, whereas preventative measures such as player education and due diligence are also more abundant at the top levels of competition.

Indeed, below the top two tiers, many competitions continue to have a lack of integrity protections in place such as player education, while lower financial rewards continue to skew the risk/reward to the extent that some players view the potential bribes that match-fixers are able to offer as more attractive. Late and/or reduced payments – and non-payments – of salaries are also reasons why this trend persists, in part due to the economic issues affecting many countries. Overall, approximately 52% of suspicious matches came from the third tier or lower, including regional leagues<sup>3</sup> and youth competitions.



Suspicious domestic soccer matches by level of competition

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



## Betting Markets Targeted & Types of Manipulation

The vast majority of suspicious soccer matches continue to feature suspicious live betting and this occurred in **82%** of cases. Within this group of matches, the suspicious betting emerged during the first half of the contest in **77%** of cases. This is not unexpected, given that first half markets were also targeted in around **50%** of suspicious matches, and because the opening 15 minutes continues to be the time period most affected by suspicious betting patterns globally.

Most suspicious matches continue to see Asian betting operators targeted primarily. This is directly a result of the structure of these bookmakers, which leads to significant integrity risks. Loose regulation, combined with an agent-based system which offers near anonymity to bettors, leads to a framework in which those placing suspicious bets can thrive and operate with little fear that their identities will be revealed.

type continued to be 'Overs only' (**25%**), 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 require the involvement of both teams, account for **7.8%** of all manipulations, a figure which is consistent with 2021. It should be highlighted that in one region, correct score manipulations represented **42%** of all suspicious matches. This is very high and far above the global average, and is representative of more teams being involved in match manipulation in this region, as naturally a correct score manipulation requires both teams, and large number of players, to be complicit.

Finally, match officials were highlighted for their potential involvement in **7.9%** of suspicious matches due to the betting analysis indicators and their actions on the field. From these matches, there was a clear trend of 'Overs only'

48.7%

Combined Result (-AHC & Overs)

24.8%

'Overs only'

7.8%

'To lose by minimum margin' (-AHC)

7.8%

Complex manipulations

10.9%

Other

Combined result manipulations continue to be the most common method of manipulation globally, accounting for **49%** of suspicious matches. This 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 manipulation

manipulations (**78%**). This trend is however expected, as because in theory, match officials can have a great influence over goals occurring in a match (through for instance penalty kicks), while it can be more difficult to ensure which team scores the goals, making the 'Over only' manipulation method more attractive to referees.

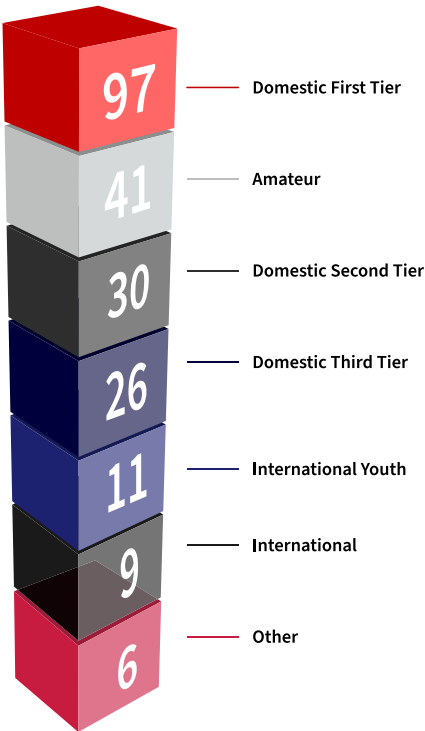
# IN DEPTH: BASKETBALL TRENDS

There were more suspicious basketball matches identified in 2022 than any other year in the history of the Integrity Services. A total of 220 basketball matches were deemed suspicious in 2022, which is a 214% increase compared to 2019 (the previous highest figure) in which 70 matches were considered suspicious. This also eclipses last year's total of 63 suspicious matches by a very significant margin, highlighting the upward trend of suspicious activity in basketball on a global scale.

The 220 suspicious basketball matches took place in five different continents, with Europe and Asia combining to account for 91% of all suspicious matches. The remaining 9% of suspicious matches took place in North America, South America, and Africa. In total, 101 different teams were identified as complicit in the manipulation of matches this year across 33 different countries.

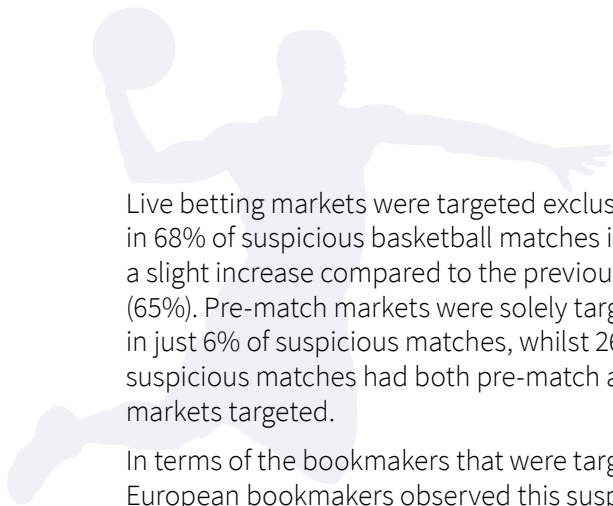


Suspicious basketball matches by continent



In 2021, the majority of fixing occurred in domestic first tier competitions (52%); however, in 2022, there was a slight decrease in suspicious activity at this top level with a greater shift towards suspicious activity taking place in domestic second tier (30) and third tier (26) competitions, as well as a substantial increase in suspicious matches from amateur (41) competitions. This trend follows that seen in soccer in recent years, whereby a higher percentage of suspicious matches are occurring at lower levels of competition. As with lower-level soccer leagues, basketball competitions further down the ladder that lack integrity protections like bet monitoring and athlete education – which is severely lacking within global basketball – make them vulnerable targets for match-fixers.

Suspicious basketball matches by competition type

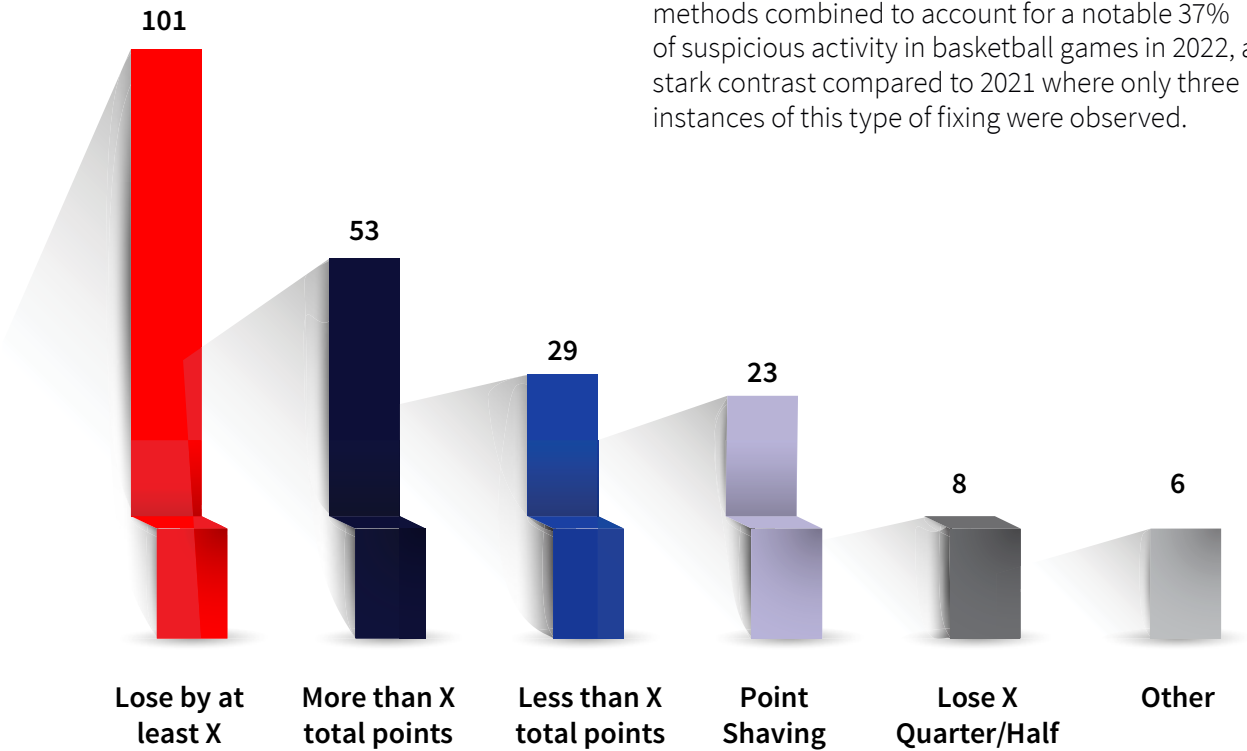


Live betting markets were targeted exclusively in 68% of suspicious basketball matches in 2022, a slight increase compared to the previous year (65%). Pre-match markets were solely targeted in just 6% of suspicious matches, whilst 26% of suspicious matches had both pre-match and live markets targeted.

In terms of the bookmakers that were targeted, European bookmakers observed this suspicious activity in almost half of the games (49%) and Asian bookmakers were targeted in 34% of games, with the remaining 17% being detected through account-level betting data<sup>4</sup>. More limited Asian betting coverage in some basketball leagues, as well as a suspected higher rate of localised manipulation attempts, both influenced the lower rate of suspicious betting flowing through Asian channels compared to soccer.

The most common method of manipulation in basketball historically is where the complicit team will “Lose by at least X” points, or simply losing the match by a wider margin than the Spread line imposed on them, and this accounted for 46% of the suspicious games in 2022. Historically, the next most common type of fixing in basketball is “Point Shaving”, which is when the team who are favoured to win the game purposely performs below their capabilities so that they do not overcome the Spread line imposed on them. This type of manipulation is appealing for match-fixers as it still allows the complicit team the opportunity to win the match outright, as long as they do so by a closer margin.

However, in 2022, Point Shaving was not as frequent as past years as it made up only 10% of the suspicious activity; instead the method of manipulation which was more common was “more/less than X total points”, which is where the implicated team or individuals (players, referees) attempt to manipulate the game by purposely allowing a high number of points to be scored (more than X total points) or doing what they can to ensure that as few of points are scored as possible (less than X total points). These manipulation methods combined to account for a notable 37% of suspicious activity in basketball games in 2022, a stark contrast compared to 2021 where only three instances of this type of fixing were observed.



Suspicious basketball matches by method of manipulation

<sup>4</sup> Account-level detection relates to the bets placed from individual accounts. It contrasts with the traditional method of detection, which instead relies on the close monitoring of odds movements.



# SUPPORTED SANCTION: OPERATION CAP

Since 2021, Sportradar Integrity Services has worked alongside the Austrian Bundeskriminalamt (ABK) – the Austrian Federal Police – to investigate match-fixing in Austria. The case was codenamed ‘Operation Cap’ (Op Cap). **Combining the resources and expertise of the ABK as well as the Monitoring and Detection (M&D) and Intelligence and Investigations (I&I) units of Sportradar, these collaborative efforts culminated in the prosecution of several match-fixers in September 2022 and February 2023.**

## Background

In April 2021, the ABK approached Sportradar to request analytical and investigative support after receiving a whistleblower complaint that a match-fixing syndicate operating from the Southeast Europe region was targeting soccer in Austria and other countries. Following an initial investigation into the allegations made by the whistleblower, I&I assessed the claims made by the whistleblower to be accurate.

Simultaneously, using the Universal Fraud Detection System (UFDS), Sportradar detected numerous suspicious matches played in Austrian soccer, particularly in the Austrian Cup, lower tier and regional competitions, further ascertaining the necessity to provide to the ABK investigation.

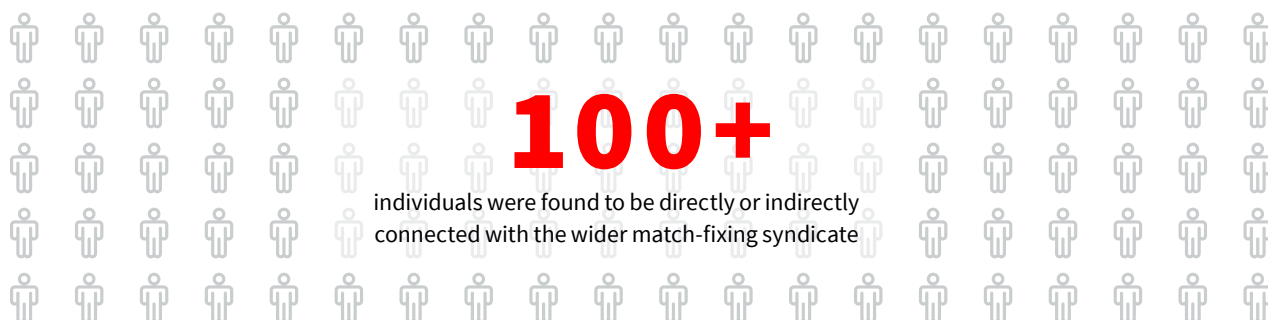
## Investigation

Throughout the remainder of 2021 and 2022, the ABK and I&I worked together to determine the identity and roles of the individuals implicated in the manipulation of matches in Austria, progressively ascertaining the extent of their involvement and interactions.

The wide range of investigative techniques and resources employed by Sportradar, including open source research, imagery, social network and financial analysis, led to the identification of individuals implicated or benefiting from the manipulation of matches in Austria, as well as several other European countries. The research additionally provided insights into the connections between the suspicious activity detected in Europe and individuals historically involved in match-fixing activities, including in Asia, Africa and the Americas.

In what should be considered an example of investigative best practice, the two-way flow of information between the ABK and Sportradar allowed for the thorough interrogation of all investigative leads and the acquisition of direct evidence, required for successful criminal proceedings.

In total, Sportradar produced more than 20 intelligence reports and bulletins, and more than 100 individuals were found to be directly or indirectly connected with the wider match-fixing syndicate.



## Outcome

By November 2021, the ABK had made several arrests, with Sportradar providing additional support in investigating any leads resulting from interrogating these suspects.

In September 2022 and February 2023, criminal charges were brought against 15 suspects; 14 went on trial in Graz, Austria, with one other going into hiding to avoid prosecution. Sportradar Integrity Services provided expert witness testimony during the trial, primarily explaining the suspicious betting patterns detected to the court.

In February 2023, 12 suspects were convicted, with criminal penalties for the suspects ranging from financial fines to prison sentences, with the estimated damage caused by the suspects' activities totalling EUR 470,000.

## Outlook

The investigation in Austria is not finished yet. At present more than 40 further matches are investigated. These convictions represent a definite win in the ongoing fight to uphold the integrity of sport and the two-way flow of information between the ABK and Sportradar Integrity Services constituted a pivotal asset in acquiring direct and implicating evidence.

Nevertheless, the investigation also highlighted the sheer scale of match-fixing in Europe, with hundreds of POIs comprising multiple syndicates plotting the manipulation of soccer matches across the continent.

Sportradar Integrity Services looks forward to further collaboration with the ABK and other law enforcement agencies, which will continue to unravel these illicit networks in the future.

**€470,000**

estimated damage caused  
by the suspects' activities



# NASCAR ON THE RECORD

**As one of our 150+ sporting partners, NASCAR has been a valuable ally in the fight against match-fixing and betting corruption, and Sportradar Integrity Services have been proud to call them partners since 2018.** Throughout this time, NASCAR's Integrity Programme has been a shining example of how to guard, prevent and act against possible integrity threats to their sport. To learn more about their journey in this area, we spoke with Joe Solosky, Managing Director of Sports Betting at NASCAR, to gain his perspective on the world of sports integrity, and NASCAR's experience in the space.

**What measures has NASCAR implemented over recent years to help protect the sport from integrity-related risks?**

NASCAR's commitment to protecting the integrity of the sport predates legalized sports betting in the US. NASCAR has displayed the same commitment to integrity with regards to sports betting since legalization in 2018 as shown by the first partnership they signed in the space was with Sportradar for integrity services. The partnership has provided NASCAR with insights and assurances that the proliferation of legal sports betting has not led to any concerns from an integrity angle. That said, NASCAR continues to be on the vanguard of protecting the integrity as legalized sports betting spreads in the US by advancing integrity partnerships to provide support, education and guidelines to our drivers, employees and fans.

**Are there any further initiatives that NASCAR is planning to implement in the near future to strengthen anti-race-fixing protections?**

For the first time, NASCAR will be hosting a workshop with its drivers in conjunction with

Sportradar to address the unquities that arise in the sport given the access fans have at races. The point of this session is for drivers and their teams to understand how to identify, avoid, alert and protect themselves through real-life examples Sportradar has seen in their other global partnerships.

**How important of a measure is bet monitoring to your integrity program, and what types of issues does it help guard against for you?**

Bet monitoring has turned out to be a very useful tool for NASCAR, especially given the frequency of reporting and granularity Sportradar provides us with. NASCAR is a sport on the rise in the betting world, and along with the benefits come some risks that bet monitoring helps us keep track of. New markets are being introduced for NASCAR each week, some of which can be more prone to integrity concerns than others, and Sportradar helps NASCAR monitor new offerings in the marketplace.

**What has your experience been so far with the ongoing regulation of the US sports betting market? Are there any areas you would like to see addressed or improvements made to help ensure NASCAR remains well protected from integrity threats?**

The biggest concern for NASCAR is the perception from its fanbase that sports betting will impact the integrity of the sport. That perception is derived from concerns based on assumption or reality, both of which need to be addressed by the sport. One of the areas NASCAR would like to see is continued collaboration across the key stakeholders of leagues, teams, operators and state regulators to ensure data is being shared to ensure our fans have no need to question any aspect of the greatest motor racing in the world.



**Joe Solosky**

Managing Director of Sports Betting at NASCAR





# GLOBAL BETTING TURNOVER ESTIMATIONS

## Methodology

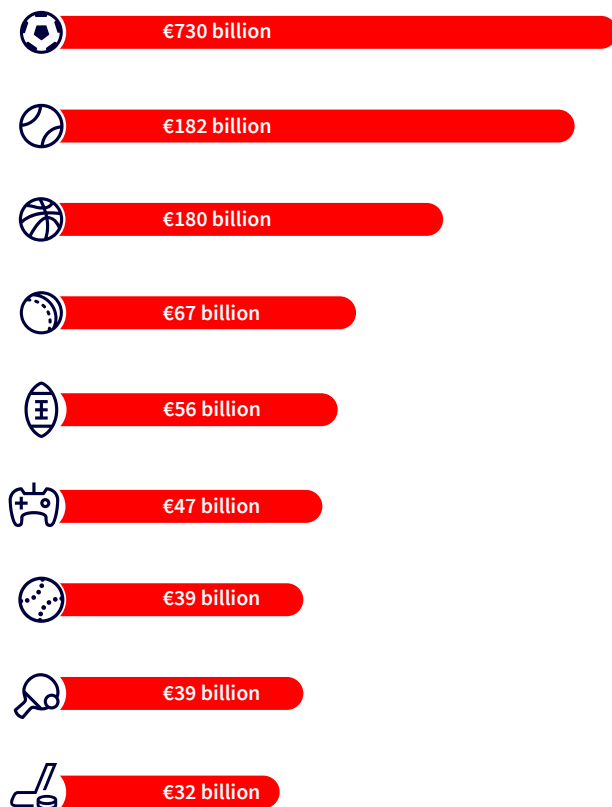
The turnover estimates listed hereafter are derived from Sportradar Integrity Services' Global Betting Turnover Model. This data driven model is powered by account level staking data from over 400 global bookmakers and brands, and incorporates historical and real-time betting data for each country and competition, allowing for unique insights into worldwide betting volumes and trends. It also incorporates data and information from national gaming regulators around the world. Using these data points, the Global Betting Turnover Model calculates estimates for national and global betting volumes across sports and competitions<sup>5</sup> over a defined period. The model has been described as "accurate and credible" in feedback by global bookmakers.

The nature of the modern global betting industry is for regulation to take place at national level, with many different structures and different data-reporting methods. As such there is limited factual sports-betting data in the public domain. That which does exist has, however, served as a strong basis for these modelled estimates. Sportradar analysts also draw upon other market intelligence and data points to ensure the final data is as robust as possible.

## Overall Global Turnover

Sportradar Integrity Services' Global Betting Turnover Model estimates overall turnover in global sports betting for 2022 of €1.41 trillion.

### Top Sports by Overall Betting Turnover



### Top Competitions by Overall Betting Turnover



<sup>5</sup> The turnover estimates on sports betting covers all organised sports worldwide with the exception of horse and greyhound racing. Non-sports markets and products commonly offered by bookmakers, such as politics, reality, virtual, casino and lottery games are not included.

# OUTLOOK AND PREDICTIONS (2023 & BEYOND)

- ▶ 2023 will almost certainly see a continuation in the level of suspicious match numbers witnessed in 2022, and likely an overall increase. Economic uncertainties around the globe and the financial ramifications of it will continue to affect sports teams and athletes. Furthermore, the still lacking integrity protections across large swathes of global sport organisations, as well as a lack of investigative appetite and resources where match-fixing is known to be occurring will ensure that these trends unfortunately continue.
- ▶ As in recent years, soccer will continue to see the highest level of suspicious matches. It is also very likely that basketball will remain the second highest sport in terms of suspicious match numbers globally.
- ▶ In terms of geographic spread, Europe will continue to have the highest level of suspicious activity across all sport, while South America is likely to continue to push Asia in terms of being the continent with the second highest total suspicious match figures. It is also likely that the number of match-fixing incidents in Africa will continue to rise as they have done in recent years.
- ▶ There will be a continued rise in cases detected through account-level betting data, supported by the growing Sportradar Integrity Exchange network. Some types of match manipulations are not always visible in traditional, major betting markets, as match-fixers attempt to hide their activity, so account-level data in combination with Artificial Intelligence is vital to prevent this, and it will continue to show its value in 2023 and beyond.
- ▶ Match-fixing cases in lower-level competitions should likely rise outside of the major sports, much as they did in 2022, with basketball following the soccer trend of high levels of suspicious match numbers at lower levels of competition.
- ▶ Athletes, players and match officials nearing the twilight of their career will continue to face the temptation to engage in match-fixing, as their main income stream from sport nears its natural conclusion. For those who chose to follow this path, it can include organising fixes themselves, or working with match-fixing syndicates as a facilitator who approaches athletes they already have relationships with. This will present one of the biggest risks in terms of the spread of match-fixing in the years ahead.

# INTEGRITY EXPLAINED

## What is match-fixing?

Global sports bodies and lawmakers define what constitutes match-fixing in different ways. But the most widely accepted definition from the 2014 Macolin Convention is ‘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>6</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 activity
- ▶ 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







## SPORTRADAR INTEGRITY SERVICES: WHAT WE DO

Sportradar Integrity Services is dedicated to protecting sport from integrity threats such as match-fixing, doping and other forms of fraud and corruption. We do this by supporting our partners in sport, government and law enforcement in the fight to keep global sport clean. Our main services, driven by technology and data, are designed around:

**Detecting match-fixing:** This we do through our Bet Monitoring & Detection technology, driven by the Universal Fraud Detection System (UFDS).

**Investigating match-fixing:** Our Intelligence & Investigation Services support global sports bodies and law enforcement to gather intelligence and evidence that ultimately build cases.

**Preventing match-fixing:** We have two approaches towards this. Education & Prevention services is aimed at athletes, coaches and other sporting stakeholders. Intelligence & Investigation Services conducts due diligence checks on individuals such as players, coaches and match officials to identify integrity risks and to detect the movement of suspicious entities to other teams and jurisdictions.

**Detecting and investigating corruption and other integrity-related matters such as doping:** Our Intelligence & Investigation Services are equipped to investigate a wide range of integrity, fraud and corruption issues.

**Supporting athlete wellbeing:** With a focus on supporting athletes and their mental health, we've developed a package of educational material for our sporting partners.

## 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

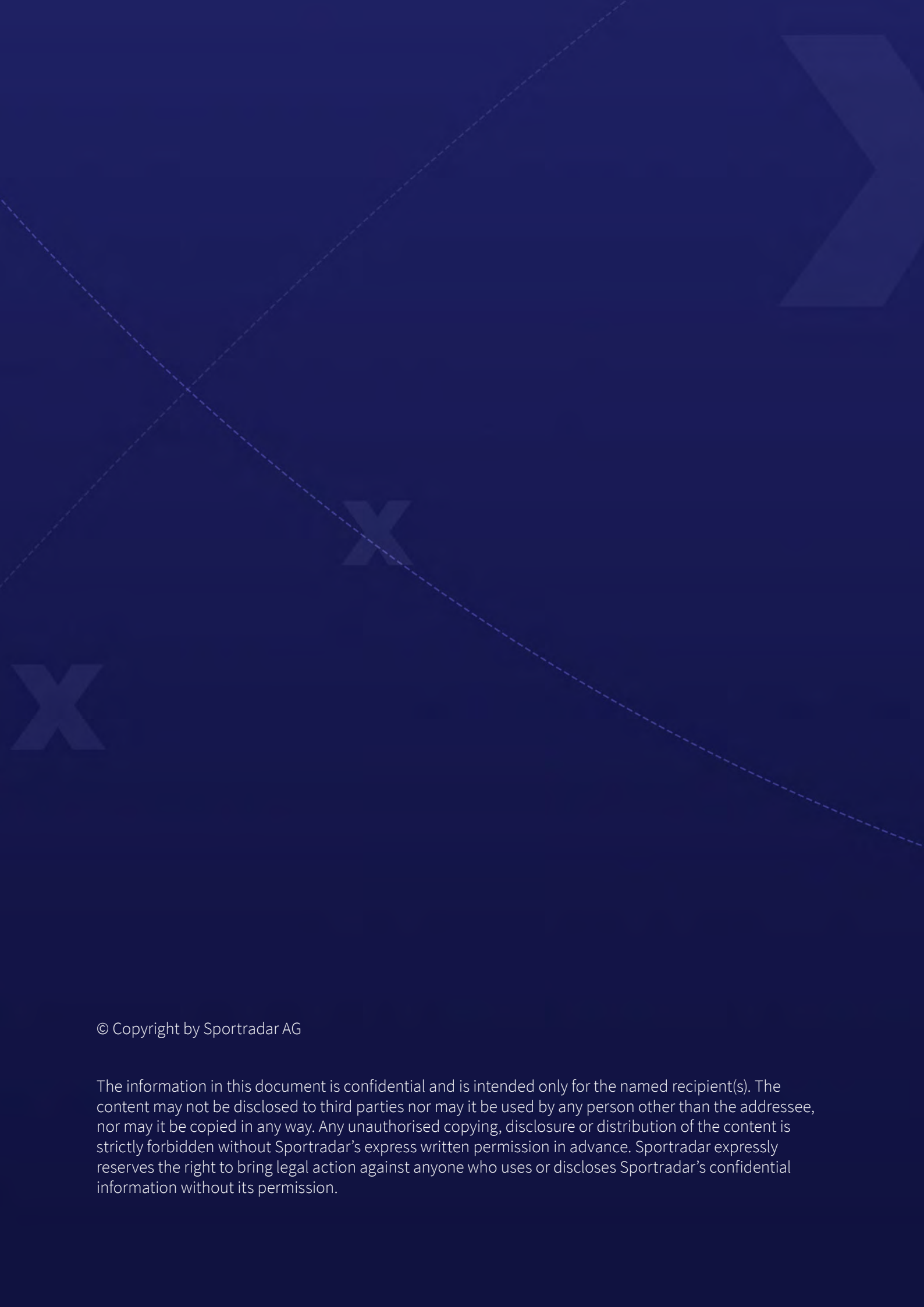
- ▶ We monitor over 850,000 matches across 70+ different sports annually, with over 150 sporting partners putting their trust in the UFDS.
- ▶ Over 30 billion odds changes from across over 600 global betting operators are filtered through the UFDS each year, covering the regulated, unregulated and grey 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 individual 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.

<sup>6</sup> <https://www.coe.int/en/web/sport/match-fixing>



## UFDS Monitoring Process

- ▶ The 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 in the past 18 years.
- ▶ 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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