



FEDERATION INTERNATIONALE DE FOOTBALL ASSOCIATION

— STUDY GUIDE —

The Consequences Of Role Of Technology In
Football With Special Emphasis On VAR And
GLT

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LETTER FROM THE EXECUTIVE BOARD

Dear Delegates,

It is with great enthusiasm that we, the Executive Board of FIFA, welcome you to the Annual World Summit 2025. This committee will be different from traditional Model UN simulations that you may be familiar with, as we step into the world of sports diplomacy and governance, where policies are shaped not by nations alone, but by an array of international sports governing bodies, national federations, private stakeholders and other such organisations, with the ultimate objective being upholding the spirit of the beautiful game.

Our agenda for this year is not only one of great relevance in the footballing world but also significant to the bona fide world, as it portrays the need for the world of sports to reflect society and develop in terms of innovation and technology alongside it. It is a call for deep analysis, critical thinking and strategic debate, which is why we implore our delegates to be thorough with their research; the accuracy of which they shall be held accountable for, give considerable thought to their opinions and stances and be clear, confident and most of all, passionate in their articulation.

The study guide that follows will serve to ensure that all delegates approach this topic with a strong understanding of the key issues, facts and debates with very little nuance. It is to be noted that the study guide is only to be used as a base for further independent research, which will be crucial to your performance on the committee.

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To be able to defend your allotted club or federation, it is essential to know key details such as past and current stances and statements, as well as data that supports your arguments, all of which are achievable only through deep individual research.

It is to be kept in mind that the content comprising the study guide is in no way representative of the personal ideologies and opinions of the members of the executive board and is intended to be as natural as possible. As members of the executive board, we are honoured to have been allowed to facilitate your discussions on some of the most pressing issues in the world of football and hope to be able to provide you with an exceptional committee experience.

Wishing you the very best of luck!

Yours sincerely,

The FIFA Executive Board

Chairperson: Amishi Sureka

Vice Chairperson: Shaurya Kapoor

Moderator: Varun Gupta

Rapporteur: Sherwyn Dsa

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INTRODUCTION TO FIFA

FIFA (Fédération Internationale de Football Association) is the world governing body of association football. It was founded in Paris in 1904 to oversee international competition among the national associations of Belgium, Denmark, France, Germany, the Netherlands, Spain (represented by the Madrid Football Club), Sweden and Switzerland. Today, FIFA's membership includes more than 200 national football associations.

As the governing authority of association football, FIFA sets the rules of play, establishes standards for refereeing and coaching, oversees international player transfers, organises the World Cup (both men's and women's) and other international tournaments and promotes the global development of the sport.

In the early 1910s, FIFA expanded beyond Europe as Argentina, Chile, South Africa, the United States and others joined. This growth spurred the initiation of an international tournament separate from the Olympics under the leadership of FIFA's third president, French football administrator Jules Rimet (1921–1954).

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The first FIFA World Cup tournament was hosted by Uruguay in 1930. Thirteen countries participated and Uruguay defeated Argentina 4-2 in the championship match. The United States finished third. The Men's World Cup has been held every four years, except during and just after World War II. FIFA's headquarters are located in Zürich, Switzerland.

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INTRODUCTION TO THE AGENDA

Agenda: The Consequences of the Role of Technology in Football with Special Emphasis on VAR and GLT

This agenda was chosen considering the ongoing evolution of football and the growing influence of technology in decision-making. The introduction of Video Assistant Referee (VAR) and Goal-Line Technology (GLT) has sparked debates regarding its effectiveness, fairness and impact on the flow of the game. While these technologies aim to enhance accuracy and minimise errors, their implementation has also faced criticism regarding delays, subjectivity and altering the traditional nature of football.

Delegates are requested to state their delegation's stance and position on the agenda, including their views on the effectiveness of these technologies, their implementation in different leagues and the balance between technological intervention and human judgment. Delegates should research past or present cases where VAR and GLT have influenced key matches and decisions, helping them formulate a stance and contribute effectively to formal debates.

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The committee is encouraged to focus on the agenda and propose solutions to improve the use of VAR and GLT while maintaining the integrity of the sport. A well-balanced resolution should aim to optimise the use of technology while addressing concerns regarding its implementation, consistency and impact on the game.

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MEANINGS AND KEY DEFINITIONS

- **Implementation:** The act of putting a plan or system into action or starting to use it.
- **Technology in Football:** The use of technological advancements to aid referees and officials in making accurate decisions in a match.
- **VAR (Video Assistant Referee):** A technology-based system that assists the on-field referee in reviewing match-changing incidents, including goals, penalties, direct red cards and cases of mistaken identity.
- **GLT (Goal-Line Technology):** A system designed to determine whether a ball has completely crossed the goal line, providing immediate confirmation to the referee.
- **Accuracy:** The quality of being correct, precise and free from errors.
- **Fair Play:** Ensuring that the game is played with integrity, fairness and adherence to rules, minimising human errors and biases.
- **Referee:** The official responsible for enforcing the rules of the game and making decisions based on match incidents.

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- **Football Federations:** Governing bodies such as FIFA, UEFA and national football associations are responsible for regulating and overseeing the sport.
- **Leagues:** Organised competitions where professional football clubs compete under established rules and regulations.
- **Clubs:** Football teams that represent cities, regions, or associations, competing in domestic and international tournaments.

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EXISTING LEGAL BODIES

1. Union of European Football Associations (UEFA)

UEFA, the governing body of European football, was established in 1954 in Basel, Switzerland. Initially comprising 25 countries, it has since expanded to 55 member associations. UEFA manages and regulates the use of VAR and GLT in prestigious tournaments such as the UEFA Champions League, Europa League and European Championship.

1. UEFA ensures the consistent use of these technologies across its competitions, providing training programs for match officials and implementing protocols for VAR interventions. Additionally, UEFA reviews controversial VAR decisions and provides transparent justifications to maintain fan confidence in the system.

UEFA Rules in Relation to VAR and GLT in Football

- VAR is covered under Protocol 1 of the VAR Implementation Handbook and Law 5 (The Referee).
- GLT is governed under Law 1 (Field of Play).

2. International Football Association Board (IFAB)

Founded in 1886, IFAB is the sole authority responsible for establishing and amending the Laws of the Game. It was originally formed by the football associations of England, Scotland, Wales and Northern Ireland, with FIFA joining in 1913.

IFAB introduced VAR and GLT as part of its commitment to reducing clear errors in officiating. It conducts trials and reviews emerging technologies before integrating them into the Laws of the Game. IFAB also provides guidelines to ensure the uniform and fair implementation of VAR and GLT across all levels of competition.

3. Court of Arbitration for Sport (CAS)

Founded in 1984 in Lausanne, Switzerland, CAS is an independent judicial body that resolves legal disputes related to sports, including controversies arising from VAR and GLT decisions. CAS provides an arbitration platform for clubs, players and federations to challenge perceived injustices resulting from technological rulings.

4. FIFA Referees Committee

The FIFA Referees Committee oversees the training, development and assessment of referees at the international level. It ensures the proper application of VAR and GLT in FIFA tournaments and evaluates referees' performances to provide recommendations for further training and development.

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5. Other Regional Referees Committees

- UEFA Referees Committee (Europe)
- CONMEBOL Referees Committee (South America)
- AFC Referees Committee (Asia)
- CAF Referees Committee (Africa)

These committees ensure that match officials are well-trained in using VAR and GLT. They organise workshops, conduct post-match analyses and collaborate with technology providers to improve officiating standards.

WHAT ARE VAR AND GLT?

In a nutshell, VAR is a technology-aided officiating system designed to assist on-field referees in making accurate decisions during crucial moments in a football match.

The VAR team monitors the game remotely on multiple screens and has real-time access to video footage through multiple camera angles. A typical VAR team consists of a VAR official, three assistant video assistant referees (AVARs) and a video replay operator.

Unlike sports such as hockey or cricket, where the referee/umpire or players must request video reviews, VAR continuously monitors play and automatically alerts the referee if it detects a potential error.

VAR can intervene in four specific situations where a “clear and obvious error” or “serious missed incident” may have occurred:

1. **Goals/no goals** – Checking for offsides, encroachment during penalties and whether the ball crossed the line.
2. **Penalty/no penalty** – Determining if a foul occurred inside the box, if a simulation took place, or if an incorrect foul was given.
3. **Direct red cards (not second yellows)** – Reviewing the severity of a foul and cases of mistaken identity.
4. **Mistaken identity** – Ensuring the correct player receives disciplinary action.

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FIFA first implemented VAR at the 2018 FIFA World Cup, marking a historic shift in football officiating. FIFA President Gianni Infantino called it the "best-ever" World Cup, attributing part of its success to the referees and the VAR system. FIFA's Deputy Secretary General Zvonimir Boban stated:

"VAR is not changing football; it is cleaning football and this was our overriding aim when we started the VAR project together with IFAB."

The International Football Association Board (IFAB), which oversees football's laws, mandates that competitions must meet strict requirements before implementing VAR, including referee training and proper technological infrastructure.

What is Goal-Line Technology (GLT)?

Goal-Line Technology (GLT) is a system designed to determine whether the ball has fully crossed the goal line, thereby eliminating errors in goal decisions. It was first introduced in competitive football at the 2014 FIFA World Cup and is now used in major leagues like the Premier League, Bundesliga and Serie A.

How GLT Works

GLT relies on two main types of technology to track the ball's position:

1. Magnetic Field Systems:

- Cairos Technologies (in collaboration with Adidas): Uses a ball with an embedded chip that interacts with a magnetic field near the goal line.
- GoalRef: Similar to Cairos, GoalRef uses sensors inside the ball and magnetic fields around the goal to detect when the ball fully crosses the line.

2. Camera-Based Systems:

- Hawk-Eye (Sony-owned system): Uses multiple high-speed cameras around the stadium to create a 3D image of the ball's position. This system was first used in cricket and later adopted by football leagues like the Premier League.
- Goalminder: A goal-mounted camera system that does not provide automatic decisions but allows referees to review footage manually to determine whether the ball crossed the line.

HISTORY OF IMPLEMENTATION OF VAR AND GLT

VAR:

The idea of VAR was first conceived as part of the ambitious Refereeing 2.0 project devised by The Royal Netherlands Football Association (KNVB) in 2010. It sought to introduce the effective use of technology in making on-field decisions by football referees more error-free.

While the goal-line technology, which was also under the same project, soon found mass adoption and was accepted by FIFA after trials in 2012, VAR took more time to gain traction.

After several mock trials, the first-ever live trial of the VAR system was conducted in a friendly match between Eredivisie sides PSV and FC Eindhoven in July 2016. In international football, VAR was first used in a friendly match between Italy and France on September 1, 2016.

Meanwhile, the first professional football game with a VAR presence was an official first-round KNVB Cup tie between Ajax and Willem II on September 21, 2016. This was also the first time that a pitchside monitor was introduced with VAR. The 2017 FIFA Confederations Cup marked the first instance that VAR was used in an international tournament.

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The A-League in Australia was the first top-flight league to adopt VAR in 2017 and was soon followed by Major League Soccer (MLS) in the USA. Among the European elites, Germany's Bundesliga and Italy's Serie A adopted VAR in the 2017-2018 season, while Spain's La Liga and France's Ligue 1 introduced the technology in 2018-2019.

England's Premier League introduced VAR in the 2019-20 season.

VAR's adoption in the FIFA World Cup 2018 in Russia was a major landmark and eventually paved the way for the system's integration into the UEFA Champions League in 2018-19.

GLT:

Goal-line technology (GLT) discussions began in the early 2000s, with FIFA and the International Football Association Board (IFAB) exploring ways to assist referees in determining whether the ball had completely crossed the goal line. Initial proposals were rejected due to concerns over disrupting the game's flow and maintaining human control over decisions. However, high-profile incidents, such as Frank Lampard's disallowed goal at the 2010 FIFA World Cup, intensified calls for technology. In 2011, IFAB approved the first official testing phase, evaluating multiple systems, including Hawk-Eye (camera-based) and GoalRef (magnetic field-based). After extensive trials in European leagues and at FIFA headquarters in Zürich, IFAB approved GLT in July 2012, making it the first technology authorised for competitive football.

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It was officially introduced at the 2012 FIFA Club World Cup in Japan, with Hawk-Eye and GoalRef both being used. Following successful implementation, the Premier League became the first domestic league to adopt GLT in the 2013-14 season, followed by the 2014 FIFA World Cup, where it was widely praised for its accuracy. UEFA introduced it in the Champions League in the 2016-17 season, ensuring its presence in all major competitions. Today, GLT is a standard in top-tier football, with its accuracy and instant decision-making making it one of the sport's most successful technological advancements.

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IMPACT OF VAR AND GLT ON MODERN FOOTBALL

VAR (Video Assistant Referee) and GLT (Goal-Line Technology) have had significant impacts on modern-day football, including enhanced decision-making accuracy, a reduction in controversial calls and improved fairness in the game. After the introduction of VAR (Video Assistant Referee) and GLT (Goal Line Technology), various leagues reported higher rates of accuracy in decision-making. The Premier League, for example, reported that the overall number of correct decisions in matches increased to 96%, compared to 82% before VAR was introduced.

Similarly, GLT, first introduced in the 2013 FIFA Confederations Cup, has ensured that referees no longer rely on subjective judgment for goal-line decisions, with the technology providing an instant decision within one second with a great degree of accuracy.

However, despite these improvements, both technologies have faced criticism, particularly regarding their impact on the pace and emotional intensity of football. VAR has been accused of disrupting the flow of the game due to lengthy reviews.

The average time taken for a VAR review in the Premier League is 55 seconds, but in some cases, particularly for offside decisions, reviews have taken over 3 minutes, frustrating fans and players alike. Additionally, the rise of marginal "offside by millimetres" calls has sparked controversy, with players penalised for being slightly ahead of defenders based on body parts like their shoulders or toes. In the 2020-21 season, the Premier League saw 32 goals disallowed for offside that were less than 5 centimetres, raising concerns over the spirit of the offside rule.

The emotional experience of football has also been affected, especially for fans inside stadiums. Before VAR, goals were met with instant celebrations, but now players and supporters often wait in uncertainty until the referee confirms the decision. Studies show that 75% of Premier League fans feel that VAR has made celebrating goals less enjoyable, highlighting the unintended emotional consequences of technology in football. The lack of communication within stadiums also adds to the frustration, as fans are often unaware of the exact reason for VAR checks. The Premier League's KMI (key match incidents) panel from a few years ago also claims that VAR checks simply take up too much time, disrupting the flow of the game and leading to frustration among players and fans.

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"We are doing too many checks, we're taking too long in doing them as well. It's to a degree understandable, given the level of scrutiny these guys are under. But the reviews are taking too long and it's affecting the flow of the game and we're extremely aware of that and the need to improve that speed while always maintaining the accuracy."

"It's nowhere near good enough. We know it's not. It affects supporters' enjoyment of the game and we know it needs to change."

~ Tony Scholes, the
Premier League's chief football officer

The availability of these technologies is also a matter that is to be given some thought. The EFL Cup is a competition open to all 92 member clubs throughout the top four levels of English football; many of the participating clubs do not feature home grounds with VAR capabilities.

There is a significant cost involved with installing the cameras, communication devices, pitchside monitors, remote control capabilities and central operation hub that come with the use of VAR. According to The Yorkshire Post in 2021, it would have cost the Championship £12.26 million (\$16.3m) to install VAR for use in the 2019/20 league season, on top of whatever it would cost to operate the system on a per-match basis.

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In the 2023/24 EFL Cup, VAR was not in use as far as the semifinals because Championship club Middlesbrough, one of the last four participants, did not have VAR capabilities in place at Riverside Stadium. Thus, for sporting purposes, VAR was scrapped not only for that match, but also for the other semifinal that took place at Liverpool's Anfield Stadium, even though the latter venue was equipped.

Unlike the EFL Cup, the FA Cup has decided to use VAR wherever possible.

While the EFL Cup has determined that if one ground cannot provide VAR coverage, it's fairer to scrap it across the entire round, the FA Cup believes that making use of VAR in one ground does not compromise the competitive balance and fairness of those matches without it.

"Video assistant referees provide match officials with additional support and should be utilised wherever possible," the FA said in February 2024 in response to complaints regarding sporting balance. "However, only Premier League stadiums are currently licensed to use VAR due to the infrastructure, workforce and costs that are required."

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All of Europe's top five leagues—Premier League, La Liga, Serie A, Bundesliga and Ligue 1—have almost fully implemented both VAR (Video Assistant Referee) and GLT (Goal-Line Technology) to enhance officiating accuracy, with La Liga, not having implemented GLT, being the only exception. The Premier League was one of the first leagues to adopt GLT in the 2013/14 season, following FIFA's push for its use after the controversial 2010 World Cup. VAR, however, was only introduced in 2019/20, making England one of the last of the top five leagues to implement it. La Liga, as mentioned before, is yet to implement GLT as president Javier Tebas reportedly refused to pay £2.6 million (\$3.2m) - the sum required to implement the technology, however, they have had VAR facilities since the 2018/19 season. Serie A and Bundesliga were among the early adopters, integrating GLT in 2015/16 and VAR in 2017/18, setting a precedent for other leagues to follow. Ligue 1, France's top division, also implemented GLT in 2015/16 and later introduced VAR in 2018/19. Additionally, these technologies are now standard in UEFA competitions like the Champions League, Europa League and Euros, as well as FIFA tournaments, ensuring consistency across club and international football. Despite initial resistance in some leagues, particularly regarding VAR's impact on the flow of the game, these technologies are now fundamental to officiating in Europe's top-tier football.

CASE STUDIES

VAR:

1. Liverpool vs. Tottenham Hotspur: Curtis Jones' Red Card and Luis Díaz's Disallowed Goal

Teams Involved: Liverpool FC and Tottenham Hotspur

Tournament and Stage: Premier League match, 2023-2024 season

Year: 2023

Players Involved: Curtis Jones (Liverpool), Yves Bissouma (Tottenham), Luis Díaz (Liverpool)[BBC News+1](#)[Sky Sports+1](#)

Incident Analysis:

During a Premier League clash between Liverpool and Tottenham Hotspur in the 2023-2024 season, two pivotal VAR decisions drew significant attention.

- **Curtis Jones Red Card Decision**

In the 27th minute, Liverpool midfielder Curtis Jones was involved in a challenge with Tottenham's Yves Bissouma. Initially, referee Simon Hooper issued a yellow card to Jones. However, upon VAR review, the decision was upgraded to a red card. The replay showed Jones stepping on the ball, which caused his foot to roll over and make contact with Bissouma's ankle. While the slow-motion footage appeared to show a dangerous tackle, some analysts argued that the incident was accidental, as Jones lost balance after contacting the ball.

- Liverpool manager Jürgen Klopp expressed disagreement with the red card decision, suggesting that the slow-motion replay misrepresented the nature of the tackle.
- **Luis Díaz Disallowed Goal**
- One of the most controversial VAR incidents in Premier League history occurred on September 30, 2023, when Liverpool's Luis Díaz had a goal wrongly ruled offside due to a miscommunication among the VAR officials.

Incident Breakdown

In the first half, Luis Díaz was played through on goal and slotted the ball past Tottenham's goalkeeper. The on-field referee, Simon Hooper, ruled it offside. However, replays later showed that Díaz was onside when the ball was played.

VAR official Darren England and assistant VAR Dan Cook reviewed the footage but made a crucial error in communication. They mistakenly believed that the on-field referee had awarded the goal, so they conducted a quick check and confirmed the "decision" without realising they were confirming the incorrect call.

This mistake meant that instead of overturning the wrong offside call, VAR officials simply told the referee, "Check complete," leading to a legitimate goal being disallowed.

- **Aftermath and Fallout**

- The incorrect decision had major implications, as Liverpool went on to lose the match 2-1 after a late own goal by Joël Matip.
- PGMOL (Referees' Governing Body) Statement
- Shortly after the match, PGMOL (Professional Game Match Officials Limited) issued a rare and immediate apology, admitting to a "significant human error." Their statement read:
- "PGMOL acknowledges a significant human error occurred during the first half of Tottenham Hotspur vs. Liverpool. The goal by Luis Díaz was incorrectly disallowed due to a misunderstanding in the VAR process. We deeply regret this mistake and will conduct a full review to prevent future occurrences."

2. Everton vs. Manchester City – Rodri Handball Incident

- Teams Involved: Everton FC and Manchester City FC
- Tournament and Stage: Premier League match, 2021-2022 season
- Year: 2022
- Players Involved: Rodrigo Hernandez Cascante (Manchester City)

- **Incident Analysis**

- In a Premier League fixture between Everton and Manchester City, a controversial moment arose when Manchester City midfielder Rodri appeared to handle the ball inside his penalty area. With Manchester City leading 1-0, Everton players and fans vociferously appealed for a penalty. However, referee Paul Tierney did not award the spot-kick and VAR official Chris Kavanagh deemed there was no clear error, allowing play to continue.
- The incident sparked outrage among the Everton camp, with manager Frank Lampard expressing disbelief over the decision. Everton subsequently lodged a formal complaint and PGMOL chief Mike Riley issued an apology to the club, acknowledging the error in not awarding the penalty.

3. Portugal vs. Uruguay – 2022 World Cup Handball Penalty Decision

- Teams Involved: Portugal National Team and Uruguay National Team
- Tournament and Stage: FIFA World Cup 2022, Group Stage
- Year: 2022
- Players Involved: Bruno Fernandes (Portugal), José María Giménez (Uruguay)

- **Incident Analysis**
- In the 89th minute of a group-stage match between Portugal and Uruguay at the 2022 FIFA World Cup, Portugal's Bruno Fernandes attempted to penetrate the Uruguayan defence. Defender José María Giménez, to thwart the attack, executed a sliding challenge. As he fell backwards, the ball made contact with his left arm, which was extended to brace his fall.
- Referee Alireza Faghani initially dismissed appeals for a handball, allowing play to continue. However, upon the ball going out for a Portugal corner, VAR official Abdullah Al Marri recommended a review, leading to the award of a penalty to Portugal, which Fernandes successfully converted.
- This decision sparked controversy, as it appeared to contradict the International Football Association Board's (IFAB) guidelines on handball offences. According to IFAB, a player should not be penalised for handball if the arm position is used for support when falling or getting up from the ground, even if the ball contacts the hand before it touches the ground.
- Giménez's arm was positioned to support his body during the fall, aligning with the exceptions outlined by IFAB. The only plausible justification for the penalty would be if Giménez had deliberately placed his arm to block the ball, which, given the natural positioning for support, seemed unlikely.

Consequently, many analysts and fans viewed the penalty decision as erroneous, potentially impacting Uruguay's prospects in the tournament.

GLT CASE STUDIES

1. England vs. Germany – 2010 FIFA World Cup (Frank Lampard's Ghost Goal)

- Incident: England's Frank Lampard scored what appeared to be a clear goal against Germany in the Round of 16 when his shot hit the crossbar and bounced well over the goal line before bouncing back out.
- Controversy: The referee and assistant referee did not see the ball cross the line and waved play on, denying England a crucial equaliser.
- Impact: The incident led to widespread calls for the introduction of Goal-Line Technology, which FIFA approved for use in future tournaments.

2. AC Milan vs. Juventus – 2012 Serie A (Muntari's Disallowed Goal)

- Incident: AC Milan's Sulley Muntari scored a header that clearly crossed the goal line, but the referees failed to recognise it and did not award the goal.
- Controversy: Milan was leading 1-0 at the time and the goal could have secured a win. Instead, Juventus equalised later and the match ended 1-1.
- Impact: The controversy reignited discussions in Italy about the need for Goal-Line Technology, which was later introduced in Serie A.

3. Hoffenheim vs. Bayer Leverkusen – 2013 Bundesliga (Phantom Goal)

- Incident: Bayer Leverkusen's Stefan Kießling headed the ball into the side netting, but due to a hole in the net, the ball went inside the goal and the referee mistakenly awarded a goal.
- Controversy: Hoffenheim protested, but without GLT, the referee had no way to verify the mistake.
- Impact: The Bundesliga later implemented Goal-Line Technology to prevent similar incidents.

QARMA

1. Ways to make VAR and GLT more cost-effective, ensuring that smaller clubs/leagues/associations can implement/acquire them.
2. The fair implementation of VAR and GLT across different leagues/tournaments all across the world
3. Solutions to solve the lack of funding/financial support to smaller clubs/leagues, which has resulted in the absence of VAR/GLT/technology. Or how can FIFA address disparities in access to advanced technologies between wealthier and less wealthy football federations?
4. Protocols that should be in place to handle erroneous decisions made by VAR/any tech that were/are of immense impact
5. Ways in which FIFA can ensure the consistent and fair application of VAR/GLT/technology across different leagues/tournaments
6. Should there be a time limit for VAR reviews to prevent game delays? If so, how long should it be?
7. Should there be stricter guidelines on the situations where VAR can intervene?
8. Should players, coaches, or teams have the right to challenge decisions using VAR? If so, how can this be regulated?

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9. What mechanisms can be put in place to prevent the misuse or over-reliance on technology in football?

10. Should additional technologies be introduced to complement VAR and GLT, and what criteria should be applied to evaluate their necessity?

SUGGESTED MODERATED CAUCUS TOPICS

1. What are the financial and logistical challenges of implementing VAR and GLT globally?
2. Should stadiums and broadcasters provide more detailed explanations of VAR and GLT rulings to enhance fan understanding and cater to sentiment?
3. What is the effect of GLT and VAR checks on the flow of the game and player morale?
4. Should FIFA mandate the uniform use of certain technologies across all leagues to ensure fairness?
5. Assessing the impact of controversial VAR decisions on the integrity of football competitions.
6. Should the implementation of VAR and GLT be standardised across all leagues and tournaments?
7. Ways to improve the speed and accuracy of VAR decisions to maintain the flow of the game.
8. Exploring the future of technology in football: Should AI-powered referees be introduced?

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TECHNOLOGIES IN FOOTBALL

1. Player Performance and Analytics

- Modern football relies heavily on data analytics to assess player performance. GPS trackers and wearable technology, such as those developed by Catapult Sports, monitor players' movement, sprint speed, heart rate and fatigue levels. These wearables, embedded in vests worn under jerseys, help clubs optimise player workload and prevent injuries by tracking excessive strain. Advanced data providers like Opta and Stats Perform gather in-depth statistics on player positioning, passing accuracy and attacking contributions, helping managers refine tactics and strategise more effectively. Additionally, artificial intelligence (AI) and machine learning are increasingly used to analyse vast amounts of player data, predicting outcomes such as expected goals (xG), expected assists (xA) and opposition weaknesses. This data-driven approach has transformed scouting and recruitment, as clubs use analytics to identify undervalued players in the transfer market.

2. Refereeing And Match Control

- Refereeing decisions have been revolutionised beyond VAR and GLT with technologies such as Semi-Automated Offside Technology (SAOT). This system uses 12 dedicated cameras tracking 29 body points of each player in real-time, providing almost instantaneous offside calls with 3D visualisations to assist referees. FIFA introduced this technology in the 2022 World Cup to speed up decision-making and reduce human error. Another key innovation is the Electronic Performance and Tracking System (EPTS), which allows teams and officials to monitor live player and ball data. Teams use EPTS devices to make tactical adjustments mid-game, while referees can access real-time information on player positioning, reducing officiating errors. These innovations have made football more transparent and precise, ensuring fair play.

3. Injury Prevention and Rehabilitation

- Injury management has greatly benefited from technological advancements. Cryotherapy chambers, which expose players to extremely low temperatures, help reduce inflammation, speed up muscle recovery and minimise fatigue. Clubs like Manchester United and Real Madrid use these chambers as part of post-match recovery routines.

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Smart boots and insoles embedded with pressure sensors provide real-time data on foot impact, helping prevent stress-related injuries such as metatarsal fractures. Biomechanics analysis, powered by motion capture cameras and force plate sensors, helps assess players' movements, ensuring they maintain proper form to reduce the risk of muscle injuries. This data-driven approach allows physiotherapists to create personalised recovery programs, keeping players in peak physical condition.

4. Fan Engagement and Stadium Experience

- The fan experience has been transformed through Augmented Reality (AR) and Virtual Reality (VR). Many clubs now offer AR-powered match replays, allowing fans to view tactical breakdowns from multiple camera angles through their smartphones. VR is also being used to create immersive experiences, such as virtual stadium tours and interactive training simulations where fans can "train" with their favourite players. Smart stadiums, like Tottenham Hotspur's modern venue, utilise high-speed Wi-Fi, contactless payments and AI-driven crowd management to enhance the matchday experience. AI-powered facial recognition is also being implemented in stadiums for ticket verification and security purposes, reducing waiting times at entry points.

5. Training and Coaching

- Technology has significantly impacted coaching methods, with AI-powered video analysis tools such as Wyscout, Hudl and InStat Scout revolutionising match preparation. These platforms allow coaches to break down match footage, analyse opponents' playing styles and identify weaknesses. Automated camera systems like Spiideo and Pixellot record training sessions without requiring human operators, providing seamless footage for analysis. Drones are also being used in training to capture aerial views of team formations, helping coaches refine tactical positioning. With the introduction of AI-driven insights, managers can now make more informed decisions, improving in-game strategy and training efficiency.

6. Ball and Equipment Technology

- Even the football itself has undergone technological advancements. The Adidas Al Rihla and Al Rihla Pro balls, used in the 2022 FIFA World Cup, feature built-in motion sensors that detect every touch, pass and shot with precision. This technology assisted referees in making more accurate handball and offside decisions by providing real-time ball movement data.

Additionally, smart shin guards and jerseys embedded with sensors track impact levels, helping medical staff assess the severity of knocks and potential concussions. These innovations enhance player safety and provide valuable performance insights.

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BIBLIOGRAPHY

- FIFA (n.d.) Goal-line technology. Available at: <https://inside.fifa.com/innovation/world-cup-2022/goal-line-technology>.
- Goal (n.d.) Top 10 most controversial VAR decisions in football. Available at: <https://www.goal.com/en-in/lists/top-10-most-controversial-var-decisions-in-football/fq67bxv45s521emlx8zd49s9t#cs18e0e4a72cb75a06>.
- Olympics.com (n.d.) What is VAR in football? Available at: <https://www.olympics.com/en/news/what-is-var-in-football>.
- Sky Sports (2024) VAR: Premier League claims 96 per cent of referee decisions are correct – so what is the future of technology in football? Available at: <https://www.skysports.com/football/news/11095/13066177/var-premier-league-claims-96-per-cent-of-referee-decisions-are-correct-so-what-is-future-of-technology-in-football>.
- Sporting News (n.d.) VAR in the EFL Cup: Rules, referee technology and Carabao Cup tournament impact. Available at: <https://www.sportingnews.com/in/football/news/var-efl-cup-rules-referee-technology-carabo-cup-tournament/b698a1b6f1fefca508fd273d>.