

Semi-Automated Technology (SAOT)

Offside

November 30, 2022

In news—FIFA is using SAOT for offside decisions in the ongoing edition of the Football world cup.

What is SAOT?

- **There are two parts to the technology** – a **sensor inside the match ball** (Adidas's Al Rihla) that is held using suspension technology, and **existing tracking tools** that are part of the VAR system as we know.
- **Kinexon, a German company that specialises in providing sensor networks and computing solutions, has designed a small in-ball device** which gives precise positional data and also **detects ball movement in a three-dimensional space**.
- Every time the ball is hit, data is sent in real time (at a whopping 500 frames per second) to a network of antennae installed around the playing field.
- Additionally, there are 12 Hawk-Eye cameras set up around the turf that shadow both the ball and the players, with as many as 29 separate points in the human body tracked.
- The coming together of the ball sensor and the Hawk-Eye cameras is in effect SAOT, which FIFA says allows for decisions that are highly accurate and quick.
- **These two data sets are run through artificial intelligence software which generates automated alerts about offsides to the match officials.** This replaces the manual effort taken in poring over replays for minutes on end.
- FIFA has made it clear that SAOT is only a confirmatory tool.
- SAOT is expected to aid such statistical thinking and data mining in football, in line with what is

increasingly the Moneyball era of sports.

