

How India's new IST rules aim to put the country on one clock

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A unified time source helps establish the sequence of events, coordinate activities across locations and reconstruct failures, transactions or cyber incidents. (Image generated using AI)

The Union Consumer Affairs Ministry on August 27 notified the Legal Metrology (Indian Standard Time) Rules 2026, designating Indian Standard Time (IST) as the sole reference for administrative, legal, commercial and other official purposes countrywide.

The rules will come into force 180 days after their publication in the Official Gazette. Systems across government departments, businesses and other institutions will need to be aligned accordingly over this period.

India already had Indian Standard Time. What do the new rules actually require machines and critical infrastructure to do differently, and why does precise synchronisation matter?

First, how did we arrive at IST?

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The CSIR National Physical Laboratory is the custodian of India's official time reference. It maintains UTC(NPLI), India's realisation of Coordinated Universal Time (UTC). Indian Standard Time is UTC(NPLI) plus five hours and 30 minutes.

What do the rules demand?

The rules now require time-dependent systems in government and critical sectors to use a traceable, authorised IST reference, with 180 days for compliance.

The rules are the latest step in India's efforts towards realising "One Nation One Time", which it announced in January 2025.

Following a successful test in which IST was disseminated between the Regional Reference Standard Laboratory (RRSL) in [Bengaluru](#) and NSE in [Chennai](#), the Consumer Affairs Ministry commissioned a White Rabbit Technology-based IST Dissemination Demonstration Network at the RRSL in Bengaluru in July 2026. The network was developed jointly by the Department of Consumer Affairs, CSIR-NPL and [ISRO](#).

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How does White Rabbit keep computers on the same time?

White Rabbit is an open-source networking technology designed to synchronise computer clocks over fibre-optic networks.

Simply put, it sends a timing signal through a fibre-optic cable and measures how long the signal takes to reach another computer. Because that travel time can vary slightly, White Rabbit [measures the delay](#) and adjusts for it, allowing clocks in different locations to stay synchronised.

In other words, it does not simply send a time signal and assume it arrived exactly when expected. It measures the delay and corrects for it.

It was initially developed by the European Organization for Nuclear Research (CERN) for scientific experiments that required thousands of computers and other devices to keep time with one another.

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Ordinary internet networks can also be used to synchronise clocks, but the time taken for data to travel can vary as it moves through a network. White Rabbit is designed to account for these delays, allowing for more precise synchronisation.

Fibre-optic networks also offer a way to distribute time without relying on a satellite signal at every location. Satellite signals can be vulnerable to jamming or spoofing — where a false signal is made to look like a genuine one. A physical fibre link does not face those particular wireless vulnerabilities, although it can still be disrupted, and the wider timing network needs safeguards and backup sources.

White Rabbit is therefore one way to carry the official time from the national reference to other systems. The CSIR-NPL keeps that reference time. Organisations then connect their computer systems to approved time servers or networks that pass it on. Their machines regularly check against that source and adjust their clocks if needed.

Why is precise synchronisation necessary?

Systems across multiple organisations — banks, telecommunications, power grids and even defence systems — need to coordinate. A unified time source helps establish the sequence of events, coordinate activities across locations and reconstruct failures, transactions or cyber incidents.

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According to the Telecommunication Engineering Centre, inconsistent clocks across networks can make server logs difficult to correlate. Different server clocks could potentially make it difficult for investigators to determine which subscriber was using an IP address at a particular time.

Financial markets already operate under precise clock-synchronisation requirements. Since 2013, SEBI has directed stock exchanges to synchronise their system clocks with atomic clocks before the start of the market so that their clocks have precision of at least one microsecond and accuracy of at least +/-one millisecond.

This precision matters because financial systems can generate and process orders in fractions of a second. Accurate timestamps help establish the sequence in which orders and trades happened and can be important when regulators investigate unusual activity or disputes.

Why is India now pushing for domestic timing infrastructure?

The push for IST uniformity comes along with India's efforts to reduce its reliance on external satellite navigation systems and their timing signals.

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NavIC, India's own satellite navigation system developed by ISRO, provides an indigenous source of positioning, navigation and timing signals. Alongside this,

terrestrial systems such as White Rabbit can distribute IST over fibre-optic networks. Together, these give India more than one domestic route to provide precise time to critical infrastructure.

The aim is to create a more resilient system with multiple ways of keeping critical infrastructure synchronised. If one source of timing is disrupted — for instance, by jamming or spoofing — critical systems can have another way to maintain a reliable time reference.