

White Rabbit Technology-based Indian Standard Time (IST) Dissemination Demonstration Network

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The Union Minister for Consumer Affairs, Food & Public Distribution and New & Renewable Energy recently commissioned the White Rabbit Technology-based Indian Standard Time (IST) Dissemination Demonstration Network at the Regional Reference Standard Laboratory (RRSL), Bengaluru,

About White Rabbit Technology-based Indian Standard Time (IST) Dissemination Demonstration Network

- It was commissioned at the **Regional Reference Standard Laboratory (RRSL)** in **Bengaluru**.
- It was **developed jointly** by the **Department of Consumer Affairs, CSIR-National Physical Laboratory (CSIR-NPL)** and the Indian Space Research Organisation (**ISRO**).

- The system **disseminates IST, traceable to national time-keeping authority UTC (NPLI), using Precision Time Protocol (PTP)-based White Rabbit technology.**
- The system is designed to **deliver highly accurate, secure and resilient time synchronisation for critical sectors,** including banking, financial markets, telecommunications, power systems, transportation, digital governance and other strategic infrastructure.
- This network has already successfully **verified the secure transmission of IST between RRSL Bengaluru and the National Stock Exchange (NSE) in Chennai.**

What is White Rabbit Technology?

- White Rabbit is **an advanced networking protocol that allows devices connected via optical fibre to synchronise their internal clocks with an accuracy of less than one nanosecond** (one-billionth of a second).
- **Originally developed at CERN** (the European Organisation for Nuclear Research), this technology acts as a **high-precision upgrade to standard Ethernet networking.**
- Its primary innovation is its **ability to continuously monitor and compensate for signal delays** across long distances.
- By doing so, it **ensures that every node in a network** remains **perfectly aligned,** effectively **eliminating the “time drift”** that occurs in conventional systems.
- **Why is this deployment critical for India?**
 - **Currently, many of India’s digital systems**—ranging from telecommunications to banking—**rely on foreign satellite-based timing services** such as the US-operated **GPS.**
 - While these systems are functional, they are **vulnerable to external risks.**
 - An **indigenous time dissemination network** will make these services **more secure** and resilient by **reducing dependence on external sources.**

Source: **DD News**

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