

Traceable Time Package (TTP) by Hoptroff and Orolia

Traceable, Auditable and Resilient time down to your network

Applications

- Financial market
- Edge Data Centers
- Media & Broadcast
- Call Centers
- Blockchain
- Critical infrastructures



Traceable, accurate time down to core applications

Though rarely visible, time and frequency synchronization is a key enabler of most distributed critical infrastructures. They require a common timescale, with accuracy requirements driven by regulations, system-level, technology or security considerations. Transaction-based applications in particular, use precise timing for transaction timestamping, for event or security log entries, and even for time-based authentication. In many applications, the traceability (to UTC) of such time needs to be auditable for regulation conformance.

While Global Navigation Satellite Systems (GNSS) provide efficient and accurate access to UTC time, the signal is vulnerable to denial of service (RF jamming) or integrity threats (RF spoofing). An effective method to mitigate these GNSS vulnerabilities is to get time through the network, from an extremely accurate, verifiable and traceable time source – called an Enhanced Primary Reference Time Clock (ePRTC).

Traceable Time Package (TTP)

The Traceable Time Package (TTP) **brings increased time distribution resiliency** thanks to a UTC traceable network ePRTC. It provides continuous, GNSS independent, traceability monitoring of delivered time, with reporting, auditable logging and alerting capabilities.

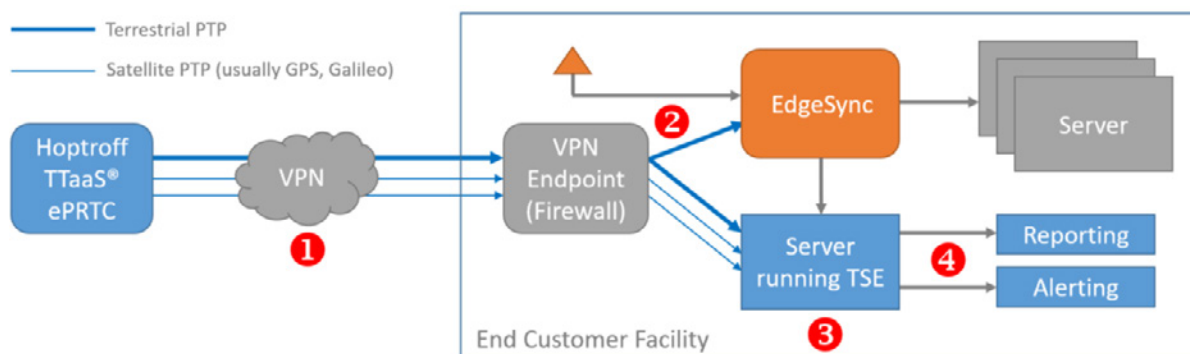
The Traceable Time Package (TTP) is **simple to deploy and easy to operate and manage**, with no need for proprietary fabric, leased line or being hosted in a datacenter. Time transfer with accuracies of 100s of microseconds to milliseconds is performed securely through a VPN, and is therefore compatible with any IT infrastructure.

The Timing Traceability package complements Orolia's EdgeSync time server and includes premium **24/7 technical customer support**, advanced replacement, proactive notification of software upgrades, priority service first class ranking and free ground shipping of repairs.

Time distribution and traceability monitoring architecture

Traceable Time Package (TTP) is based on Hoptroff TTaaS® which consists of

- A Precision Timing Protocol (PTP) timefeed originated from a network ePRTC, which is traceable to the Swedish National Metrology institute for Time (RISE). This timefeed is transferred via a VPN
- The Hoptroff Time Suite Enterprise (TSE) application, which runs on a customer server, and performs traceability monitoring, including configurable reporting, logging and alerting.



The timing architecture includes:

1. The VPN, between Hoptroff and customer facilities, supporting the Hoptroff TTaaS® timefeed
2. EdgeSync time server (to be ordered separately from Traceable Time Package (TTP)). EdgeSync can be configured with GNSS or TTaaS® as the primary reference. EdgeSync is the PTP GrandMaster or NTP server within the customer facility
3. TSE application, running on the monitoring server, compares the time extracted from the TTaaS® timefeed and the time coming from EdgeSync.
4. TSE elaborates verifiable and auditable data reports. Compliance reports are generated in seconds and can be automated.
KPIs are source traceability, accuracy and granularity. Alerts can be configured with time offset thresholds.

Compatibility

Time Suite Enterprise (monitoring server) is compatible with the following operating systems:

Windows	2008 R2, 2012, 2016, 2019
Linux	RHEL 7, RHEL 8, Centos 7, Centos 8