



TimeLynx



**Precise.
Reliable.
Secure.
Traceable.**

Time-as-a-Service

TimeLynx Provides Time-As-A-Service, Guaranteed

TimeLynx is a Time-as-a-Service (TaaS), delivering UTC traceable time directly to your rack using the **White Rabbit protocol** and **Precise Time Protocol (PTP)**. TimeLynx guarantees 100 nanoseconds to UTC with fully redundant timing signals. Since TimeLynx is delivered as-a-Service, you are not required to install, maintain or manage your own infrastructure.



100 nanoseconds accuracy guaranteed



Scalable to hundreds of nodes in datacenters



No maintenance or management of hardware required



Redundant timing signals from GNSS to server rack



Avoid ongoing management and maintenance cost



Avoid costly capex and installation

KEY ADVANTAGES

• Fully-Managed Service

- » All management of timing infrastructure (GNSS receiver, antenna, backup units, boundary clocks, grandmaster clocks, time servers) is taken care of for you by the TimeLynx Time-as-a-Service through an SLA.

• Maintenance-Free

- » No maintenance or management or installation required.
- » All you need is to subscribe to the service and plug your infrastructure into TimeLynx time source.

• Protected Against GPS Interference (Jamming/Spoofing)

- » Resilient to GNSS / GPS disruption.

• Time Signal Accuracy and Time Synchronization

- » 100 nanosecond accuracy to UTC guaranteed under the SLA.
- » 100 nanosecond accuracy using White Rabbit Time Protocol.
- » 250 nanosecond accuracy using PTP.

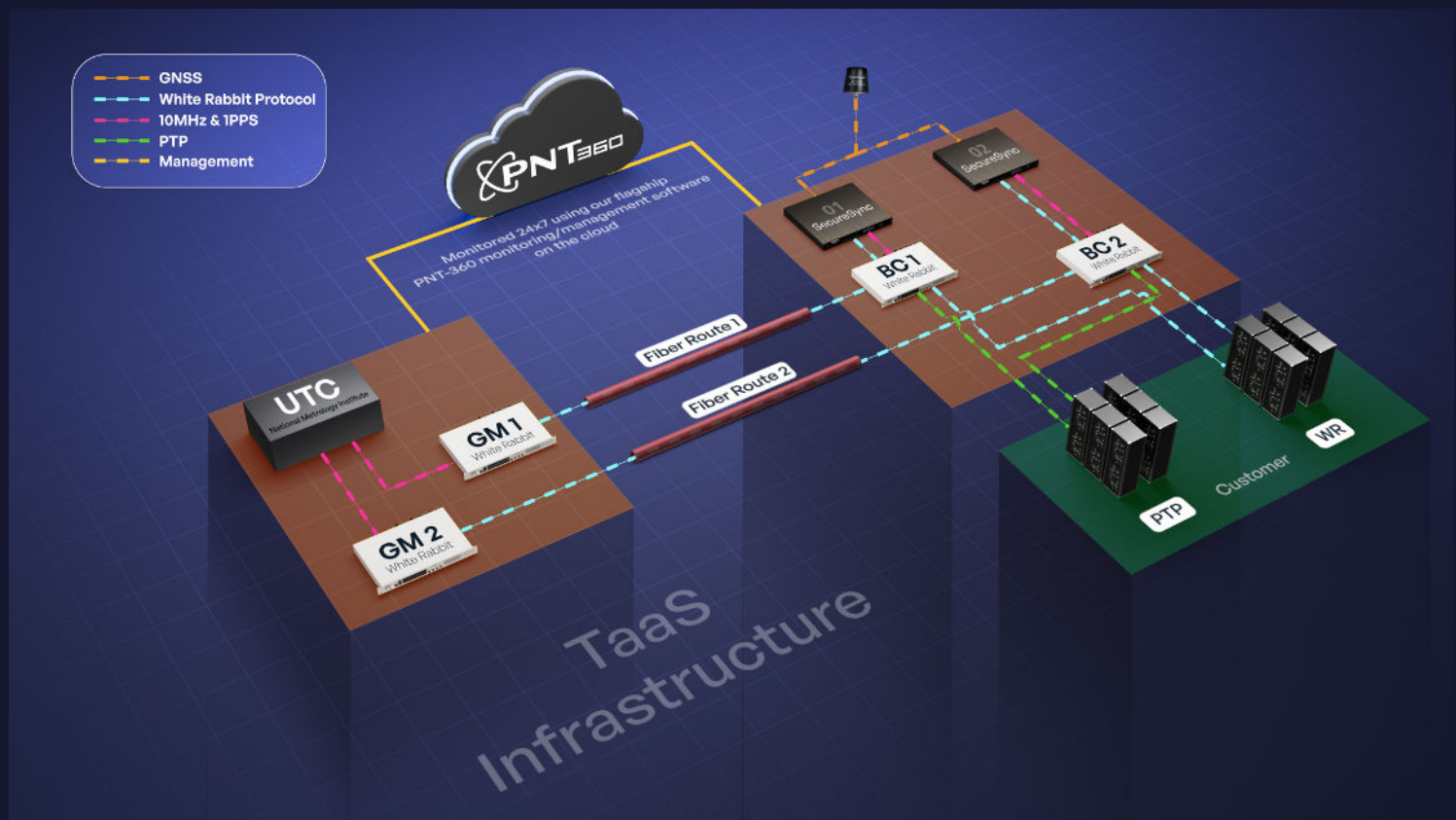
• Traceable, Resilient and Reliable service

- » By integrating with the local national metrology institution (NMI) along with GNSS receivers and other signals of opportunities, TimeLynx delivers traceable, GNSS independent resilient timing service backed by an industry leading SLA of 99.9% to your colocation equipment in a data center.

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Some of the key use cases for TimeLynx service include:

- » **Financial Services:** Financial institutions, exchanges or high frequency trading companies with regulatory compliance needs, i.e. MiFID II, CAT and FINRA etc. needing a highly accurate and traceable time synchronization service.
- » **Broadcast & Media:** TV stations and broadcast studios managing and delivering high fidelity video and audio services, video games and streaming services will benefit from the fast timing PTP service to provide positive customer experience.
- » **Data Centers/Enterprise Infrastructure:** Customers with large Enterprise infrastructure being deployed in the off-prem data centers with distributed computing and databases, can benefit from highly accurate Time-as-a-Service.
- » **Security Event and Incident Management (SEIM):** Companies actively managing log files and security threats, and other real-time monitoring activities will require fast time synchronization.
- » **Telecommunications:** Cell network providers who need precise time synchronization (Phase) to support the 5G timing needs including O-RAN and public O-RAN standards.



Specifications			Notes
Protocol	White Rabbit	PTP (ITU G.8275.1)	Optional 1PPS Supported
SLA (Accuracy to UTC)	100 ns	250 ns	In Metros with Direct Fiber Traceability
	500 ns	500 ns	In Metros with Common-View Traceability
Typical Accuracy to UTC*	1-5 ns	5-25 ns	In Metros with Direct Fiber Traceability
	<50 ns	<50 ns	In Metros with Common-View Traceability
SLA (Availability)	99.90%	99.90%	With diverse cross-connects
Transport Mode	L2/Ethernet	L2/Ethernet	
No of feeds	2 Per Subscription	2 Per Subscription	Redundant Time Service Feeds Delivered
Customer End Point Equipment Requirements	Boundary Clock	Boundary Clock	Customer end point is configured as a Boundary Clock
	2xSimplex SMF per subscription	2xSimplex SMF per subscription	Customer connects their cross connect to the Safran POP
	Bidi SFP Tx:1310nm RX:1490nm	Bidi SFP Tx:1310nm RX:1490nm	Customer connects their cross connect to the Safran POP

*Typical accuracy levels are not guaranteed as they depend on various factors such as customer environment, network traffic, operating environment

Additional Technical Specifications

Clock Reference Sources:

- Time Reference source from the local NMI transferred directly over diverse fiber link using White Rabbit protocol and/or using common-view receiver to support traceability and resiliency.
- Multi GNSS receivers with anti-jam antennas and IDM SW and atomic clock for holdover and highly precise time servers with Rubidium oscillator and PTP/White-Rabbit technology.

Connectivity Requirements:

- Direct fiber connections must be provisioned between customer equipment and Safran colocation equipment using a cross connect.
- Safran LOAs can be made available after contract details are finalized.
- Customer will provide cross connects unless prior arrangements can be made between customer and Safran.
- Each connection is made over a single strand of fiber using bi-directional SFPs.
- Customer must provision two diverse single-fiber connections for SLA of 99.9% to be in effect.
- Customer side of each connection (A Side) must be made to a standards-compliant Boundary Clock.
- White Rabbit Service: Customer must use a Safran WR-Z16 or other White Rabbit Device with the provided SFP modules.
- PTP service: Customer must use a Boundary Clock that supports the ITU G.8275.1 profile over 1G SFP connections, with the provided SFP modules.
- PPS service: Customer will be provided with WR-based equipment from Safran.
- Accuracy SLA only applies when the Customer side of the service is connected to a properly configured Boundary Clock.
- Accuracy SLA does not cover devices “downstream” of the directly-connected clock. (However, if there is full on-path support through the customer network, Safran expects that if the directly connected clock is within the SLA, downstream devices will be, too).



TimeLynx

Technical Documentation

To learn more about the technical details of the TimeLynx Time Service, visit the TimeLynx documentation center

Contact us today!

safran-navigation-timing.com/contact

