

# Terrestrial timing signals for the UK

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## Designed for resilience

The **NPLTime**<sup>®</sup> service portfolio takes advantage of the UK's national timescale UTC(NPL) to provide a resilient precision time dissemination solution.

Resilience at NPL and the service nodes is provided via two independent Precision Time Protocol (PTP) feeds, referenced to two separate hydrogen masers at NPL.

At each service node a pair of PTP clocks are installed, operating in active/passive mode using the PTP Best Master Clock Algorithm.

Each service node is provided with a local caesium clock which can provide up to 30 days holdover in the event of total loss of PTP signal from NPL.

It is strongly recommended that the distributor takes a separate feed from each **NPLTime**<sup>®</sup> service node, via completely independent fibre links. A pair of PTP clocks should be installed at each datacentre, each taking the signal from the two NPL service nodes.

### NPLTime Certified<sup>®</sup>

**NPLTime Certified**<sup>®</sup> provides end users in the finance sector with a timing capability that underpins traceable time-stamping, latency monitoring and synchronisation.

Resellers connect to the signal from the NPL service nodes and deliver it to their datacentres using their own network infrastructure and making it available to users at the point of use.

#### Service functionalities at the POPs

- Traceable, certified and auditable with timing granularity of +/- 1 microsecond to UTC
- Use NPL data records to simplify regulatory obligations
- 99.9% uptime
- Continuously monitored by NPL leveraging end-to-end fiber connectivity
- GNSS-independent timing signal
- Certification by NPL
- Service performance monitoring via a digital portal

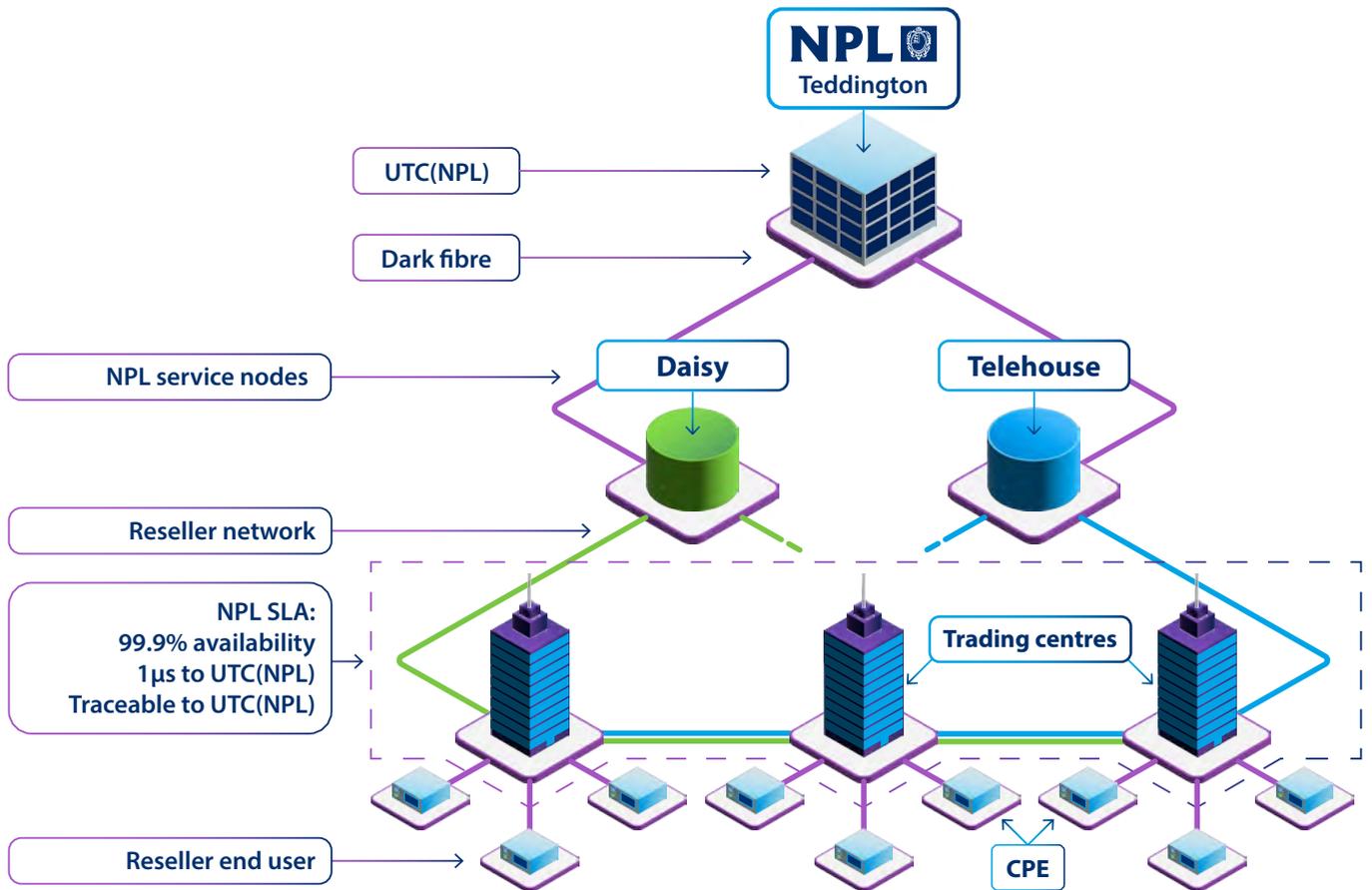
### NPLTime Access<sup>®</sup>

Users of the **NPLTime Access**<sup>®</sup> service, partner directly with NPL and can use the signal for their own timing needs or to develop assured timing services for their customers. Users of the service are responsible for setting up their link between the Point of Presence (POP) and the NPL service nodes.

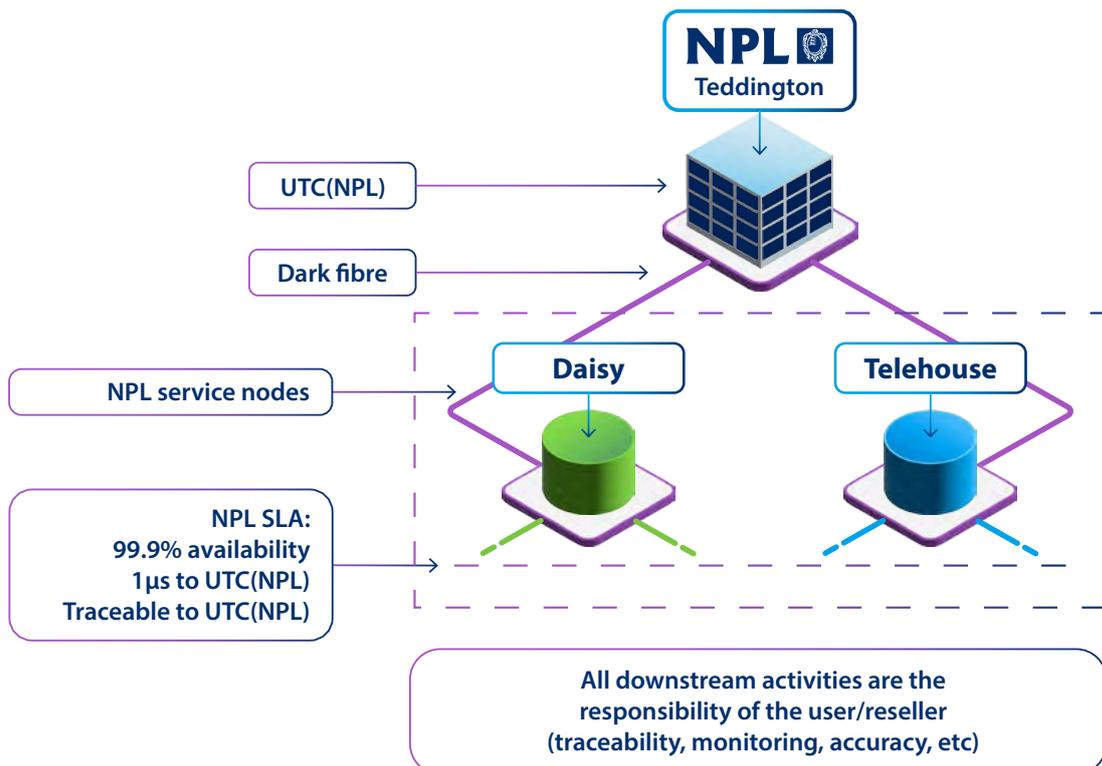
#### Service functionalities at the service nodes

- Traceable with timing granularity of +/- 1 microsecond to UTC( NPL) at the NPL service nodes
- Access to secure and resilient timing signals
- 99.9% uptime
- GNSS Independent timing signals
- Continuously monitored by NPL
- Service performance monitoring via a digital portal

# NPLTime Certified®



# NPLTime Access®



# NPLTime<sup>®</sup> services at a glance

Technical		
	NPLTime Access <sup>®</sup>	NPLTime Certified <sup>®</sup>
<b>Data centre locations</b>	Telehouse, Docklands and Daisy, Reading	Telehouse, Basildon, Equinix LD4, Interxion
<b>Accuracy to UTC (NPL)</b>	1µs	1µs
<b>Traceability to UTC (NPL)</b>	✓	✓
<b>Availability/uptime</b>	99.9%	99.9%
<b>Transmission protocol</b>	PTP	PTP
<b>GNSS independence</b>	✓	✓
<b>Signal monitoring</b>	24/7	24/7
<b>Resilience through holdover clock</b>	30 days	30 days
<b>Resilience via diverse routes</b>	✗	✓
<b>Service use</b>	Primary or secondary reference	Primary reference ONLY

Commercial		
	NPLTime Access <sup>®</sup>	NPLTime Certified <sup>®</sup>
<b>Delivered at point of use</b>	✗	✓
<b>Signal monitoring</b>	24/7	24/7
<b>Device calibration by NPL</b>	✗	✓
<b>NPL certification service</b>	✗	✓
<b>Data storage by NPL</b>	✗	✓
<b>Industry sectors</b>	All	Finance
<b>Technical support by NPL</b>	Office hours	24/7 (via reseller)
<b>Access to service via</b>	NPL	Authorised Reseller
<b>Service reporting via digital portal</b>	Signal performance at the service nodes	Signal performance at the service nodes and the reseller end points
<b>Pricing model</b>	License fee based	Monthly fee

## Technical Specifications

### Protocols supported

Precision Time Protocol – PTPv2  
(IEEE 1588-2008)

### Time Source

**NPLTime**<sup>®</sup> takes direct reference from two hydrogen masers from the UK's National Timescale

### Resilience

**NPLTime**<sup>®</sup> network infrastructure is fully resilient end-to-end

## Delivering confidence

Providing confidence of signal accuracy and availability to the **NPLTime**<sup>®</sup> users.

- Providing confidence to the **NPLTime**<sup>®</sup> users through live monitoring data
- Offering easier data interrogation and benchmarking
- Improving customer experience

Access our digital portal:  
[timeapp.npl.co.uk](https://timeapp.npl.co.uk)

## Application examples

**GNSS independence**

**Traceability to UTC(NPL)**

**Regulatory compliance**

**Plug and play system**



Contact us:

**National Physical Laboratory**  
Hampton Road, Teddington, Middlesex, TW11 0LW

Visit: [npl.co.uk/npltime](https://npl.co.uk/npltime)  
Email: [npltimeservice@npl.co.uk](mailto:npltimeservice@npl.co.uk)

Call: +44 20 8943 7070