Bodet
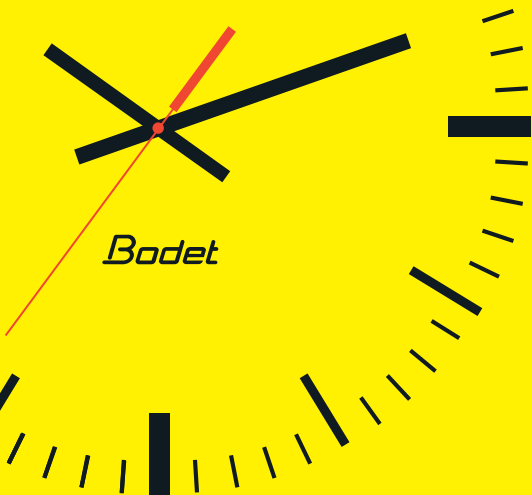
Our railway solutions

TIME DISPLAY
SYNCHRONISATION / DISTRIBUTION

Synchronise every moment

Bodet is a French family company founded in 1868. It has earned a reputation for its expertise in time management, building on its primary activity of tower clock restoration as Bodet Campanaire. Over the years, the company has expanded its time precision know-how to apply it to sports scoreboards, industrial clocks, sound systems, as well as time and attendance management. Thus, alongside Bodet Campanaire, the entities Bodet Sport, Bodet Time and Bodet Software were founded.

Now managed by the fifth generation of the Bodet family, the company continues to grow both in France and internationally, focussing on innovation to create a range of high-tech products designed and manufactured in France. A number of railway infrastructures throughout the world have come to rely on Bodet Time products to synchronise and display the time.

Bodet Time also provides telephone assistance in many languages. Our technical experts help our clients set up the products and perform functional and technical software updates.

MADE IN FRANCE

Customised support for train or metro stations

**Time information is a critical data point in the railway sector.
It is not simply a matter of displaying the time, but rather distributing a reliable, precise and secure time to a set of devices.**

The use of an exact time is required in order to coordinate the operation of a railway network, organise departures and arrivals, anticipate delays and more. The same time reference must therefore be deployed to all the devices in the IT network so that they are all synchronised: clocks, computers, ticketing, video surveillance systems, radio communication and telephones.

As a specialist in synchronisation and time distribution, Bodet Time addresses the specific needs of the railway sector, offering time servers and clocks designed for train and metro stations.

TRAIN STATIONS

Time display and synchronisation are essential to train station operations and ensure the distribution of identical and secure time information to all devices within the VDI (voice, data, image) network.

METRO STATIONS

The challenge of a metro infrastructure is to coordinate all lines and stations. Time synchronisation acts like a metronome on all the devices within the network: stations, ticketing, platforms, and more.

In a train station,
time is of the essence

An accurate time display is indispensable for both train station employees and travellers.
The time must therefore be synchronised throughout the entire station.
It is key to preventing delays, rail accidents and clocks from falling out of sync, while maintaining an efficient internal organisation: synchronised automatic ticketing, secured signal boxes and precise timestamping of events.

At the core of the time distribution system, **the time server distributes a reliable, precise and synchronised time reference to all the devices in the station** (clocks, automatic ticket dispensers, ticket validation machines, remote display panels and sound system).

To meet the specific needs of train stations, Netsilon time servers synchronise all the devices in the AFNOR time code or via the IT network (NTP).

As for the passengers, they pay particular attention to the time display to avoid missing their train.
Our customisable railway clocks are designed for stations and are exceptionally legible, no matter where they are displayed.
Any number of NTP clocks can be installed throughout the entire station and connected to the existing network cabling.
They are known for their ease of installation and commissioning.
When connected to the IT network, these clocks integrate the SNMP protocol (supervision), which allows the reporting of anomalies and a reduction in maintenance costs while ensuring continuous operation.

The benefits of an NTP time server: a reliable and secure time source

• **It retrieves and transmits a referential time signal** from a satellite source **in a precise, reliable and secure** manner to all the devices connected to the IT network.

• **It ensures a reliable timestamp** of each anomaly that occurs on the network and **guarantees the precise traceability** of information for all devices.

• **It transmits a highly secure referential time source.** Unlike time sources available on the internet that create a vulnerability in the firewall, a time server **minimises the risk of cyberattacks.**

We are trusted by

SNCB
Belgium

PKP
Poland

RENFE
Spain

SNCF
France

SNCF
France

In the metro,
time synchronisation
is at the heart of the entire ecosystem

The challenge of a metro infrastructure is to coordinate all of the stations and lines. It must therefore distribute an exact and identical time throughout its entire network: stations, lines and any other devices connected to its IT network. Its time distribution system therefore requires a reliable, precise and secure internal metronome.

A time server ensures that a secure, reliable and identical time is transmitted throughout the entire infrastructure. It retrieves a reference time and distributes it to all the devices connected to the IP network: clocks, ticketing, gates, video surveillance systems, access controls and more.

Netsilon time servers offer time distribution in the AFNOR time code or following the NTP protocol of the IT network.

Our railway clocks are designed to meet all the specific needs of metro stations: digital or analogue, luminous for underground visibility, resistant to shock, dust, external damage and temperature changes.

METRO CLIENT TESTIMONIAL, TORONTO

«
What I like about the Netsilon time server is that it is modular and easy to configure. I appreciate having a single supplier for the time servers and the clocks. It's a real time saver when managing a project
»

Alberto Muñez
Project Manager SICE Toronto

We are trusted by

Istanbul metro
Turkey

BTS
Thailand

RATP
France

Athens metro
Greece

Our railway products

All our clocks are linked to the existing IT network and synchronise to time information distributed by a Netsilon time server. They guarantee a reliable, precise, secure and identical time display throughout an entire train or metro station.

Choosing a time distribution

NTP · AFNOR · IMPULSE · WIFI · DHF · ALS/DCF

Analogue clocks

Profil 900
- 3 diameters: 30, 40, 60 cm
- Indoor or outdoor models
- 3 case colours: ○ ● ●
- Options: lighting, double-sided

Profil 700
- 5 diameters: 30, 40, 50, 60, 80 cm
- Indoor or outdoor models
- Bezel: metal
- Options: lighting, double-sided, water resistant (IP65)

Profil TGV
- 4 diameters: 30, 40, 50, 70 cm
- Indoor or outdoor models
- Hinged opening (50 and 70 cm)
- Option: double-sided

Digital clocks

Style
- 9 indoor models
- Time display: 5, 7, 10 cm
- Display depending on model: hours, minutes, seconds, date, temperature
- LED colours: ○ ● ● ● ●

HMT - HMS LED
- 9 outdoor models
- Time display: 10, 15, 20, 25, 45 cm
- Display depending on model: hours, minutes, seconds, date
- Anti-glare glass
- Automatic adjustment of luminous intensity
- LED colours: ○ ● ●

Opalys and Cristalys
- 8 indoor models
- Time display: 7 or 14 cm
- Display depending on model: hours, date, temperature, week no, text
- Energy saving mode
- Opalys: backlit version

Time servers

Netsilon
- Satellite synchronisation: GPS, GLONASS, Beidou, Galileo
- Time base: TCXO, OCXO, OCXO HQ
- Notification and supervision: Email, SNMP
- Input and output protocols: NTP, PTP, IRIG-B
- User-friendly web interface with remote server setup
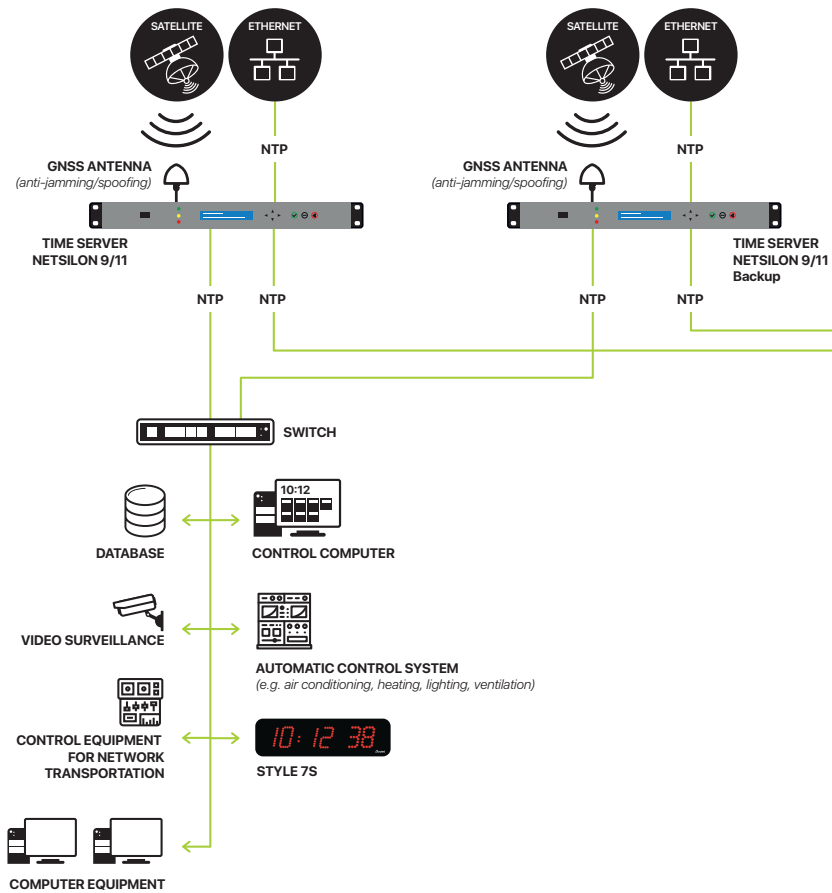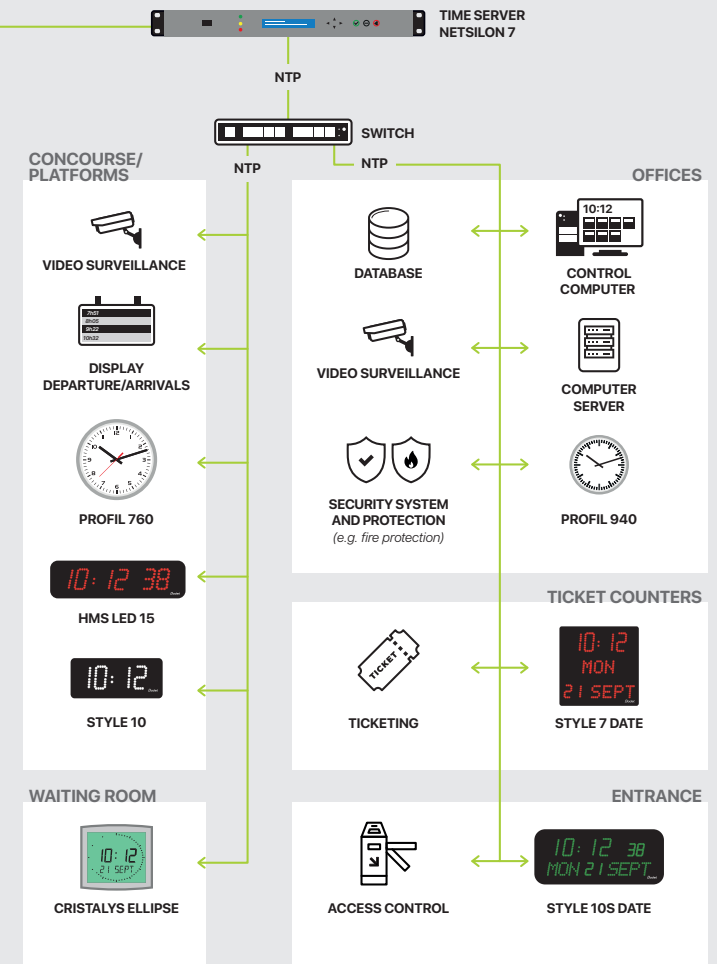
Railway architecture

2 Entrance hall

4 Train station platform

5 Metro station platform

1 Building facade

3 Office and server room

BODET

10:12

10:12 38

10:12 38

10:12
MON
21 SEPT

10:12
MON
21 SEPT
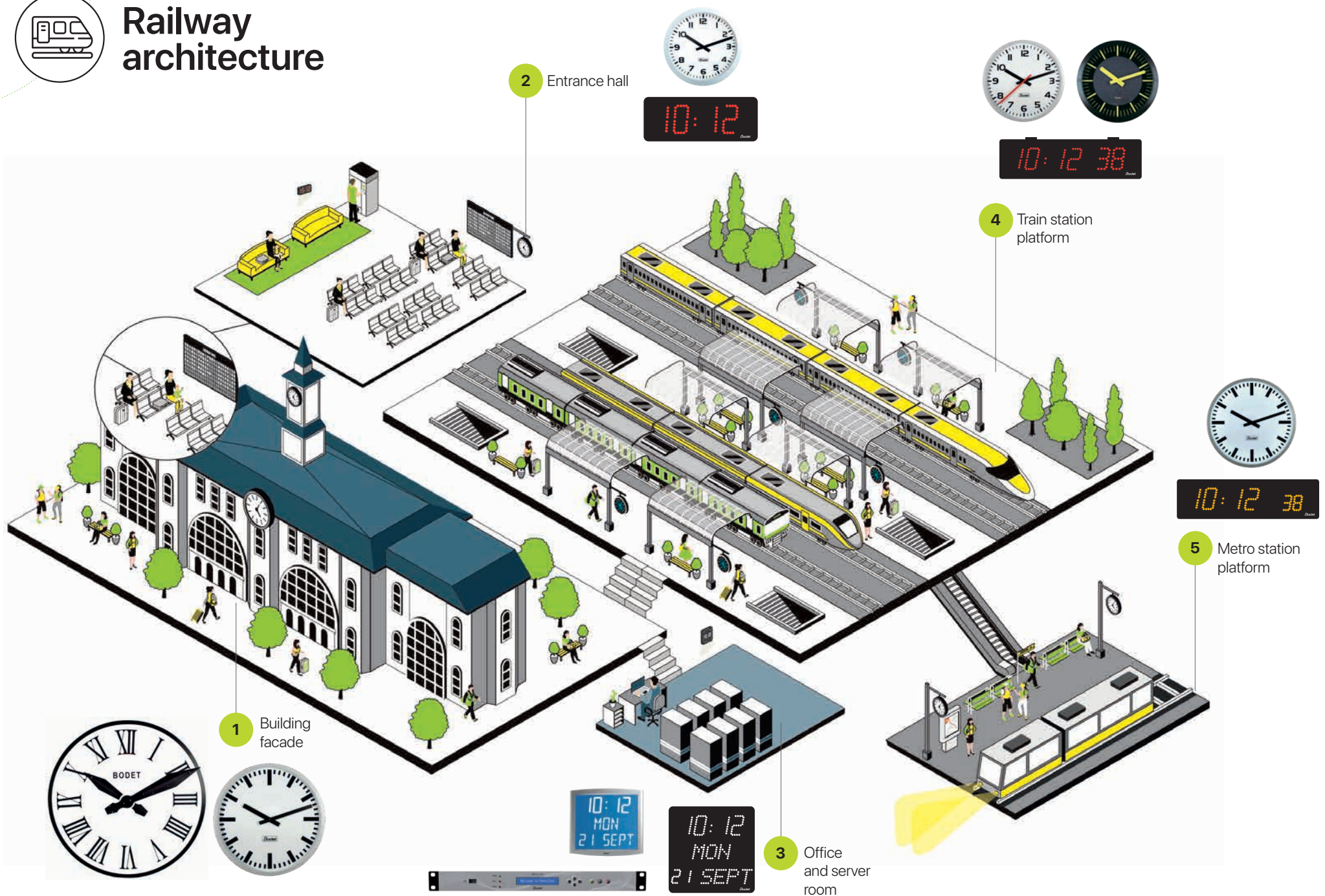
Example of NTP installation: train & metro stations

NTP

CONTROL CENTRE

SATELLITE   **ETHERNET**

NTP

GNSS ANTENNA
(anti-jamming/spoofing)

**TIME SERVER
NETSILON 9/11**

NTP   NTP

SWITCH

DATABASE   **CONTROL COMPUTER**

VIDEO SURVEILLANCE

AUTOMATIC CONTROL SYSTEM
(e.g. air conditioning, heating, lighting, ventilation)

**CONTROL EQUIPMENT
FOR NETWORK
TRANSPORTATION**

STYLE 7S

COMPUTER EQUIPMENT

SATELLITE   **ETHERNET**

NTP

GNSS ANTENNA
(anti-jamming/spoofing)

**TIME SERVER
NETSILON 9/11
Backup**

NTP   NTP

TRANSMISSION NETWORK

NTP

**TIME SERVER
NETSILON 7**

NTP

SWITCH

EXAMPLE STATION

**CONCOURSE/
PLATFORMS**

NTP

VIDEO SURVEILLANCE

**DISPLAY
DEPARTURE/ARRIVALS**

PROFIL 760

HMS LED 15

STYLE 10

WAITING ROOM

CRISTALYS ELLIPSE

NTP

DATABASE

VIDEO SURVEILLANCE

**SECURITY SYSTEM
AND PROTECTION**
(e.g. fire protection)

TICKETING

ACCESS CONTROL

OFFICES

**CONTROL
COMPUTER**

**COMPUTER
SERVER**

PROFIL 940

TICKET COUNTERS

STYLE 7 DATE

ENTRANCE

STYLE 10S DATE

Time distribution within the railway architecture

1

Building facade:
welcoming travellers with a bespoke clock

Every train or metro station is unique and has its own visual identity. Our tower clocks can be customised accordingly: dial, markings, numbers, hands, colours and lighting. Everything is designed to address the specific needs of railway structures.

2

Entrance hall:
an efficient and precise time display

With the Profil and Style indoor ranges, time can be read from a distance of up to 40 m. To meet the specific needs of the railway market, we recommend time distribution via NTP protocol, which enables the synchronisation of an unlimited number of clocks.
In addition, the clocks are connected to the computer network, integrating the SNMP protocol (supervision) to ensure each clock is functioning as intended.

3

Server room:
reliable, precise and secure time synchronisation

Precise time information is essential for keeping trains on schedule, controlling passenger flows and helping coordinate shifts, but also for synchronising devices connected to the IT network.

Netsilon time servers distribute an exact and identical time to the clocks, ticketing, video surveillance devices, IT devices, CCTV, SCADA, FOTS, PAS, PIDS systems, Radio Communication, CDRS and telephone system. It does all of this via the IT network.

4

Train station platform:
an efficient and precise time display

Train station platforms are 400 m long on average.
To distribute reliable time information identical to clocks on other platforms, we recommend:

- NTP time distribution which, combined with SNMP supervision, keeps maintenance costs down (remote anomaly detection)
- AFNOR time-coded wired time distribution with a range of up to 30 km

Our outdoor clocks are designed to be visible both day and night, and to withstand weather conditions and other types of damage.

5

Metro station platform:
legible and precise time information

Our analogue or digital clocks meet all the needs of metro lines, allowing passengers boarding a train to see the time at a glance. They are legible from a distance of up to 80 metres, illuminated and vandal-proof.

Bodet Time,
service included!

As specialist in time management, Bodet Time also guarantees:

• Pre-sales support

• Tailor-made product offer:
  from synchronisation to time display

• Products made in France & CE certified

• FAT and SAT tests on request

• Extended warranty on request

• Tailor-made trainings for customers

• Hotline assistance in France, and internationally

Synchronise
every moment

Bodet

afaq
ISO 9001
ISO 14001
Qualité
Environnement
AFNOR CERTIFICATION

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