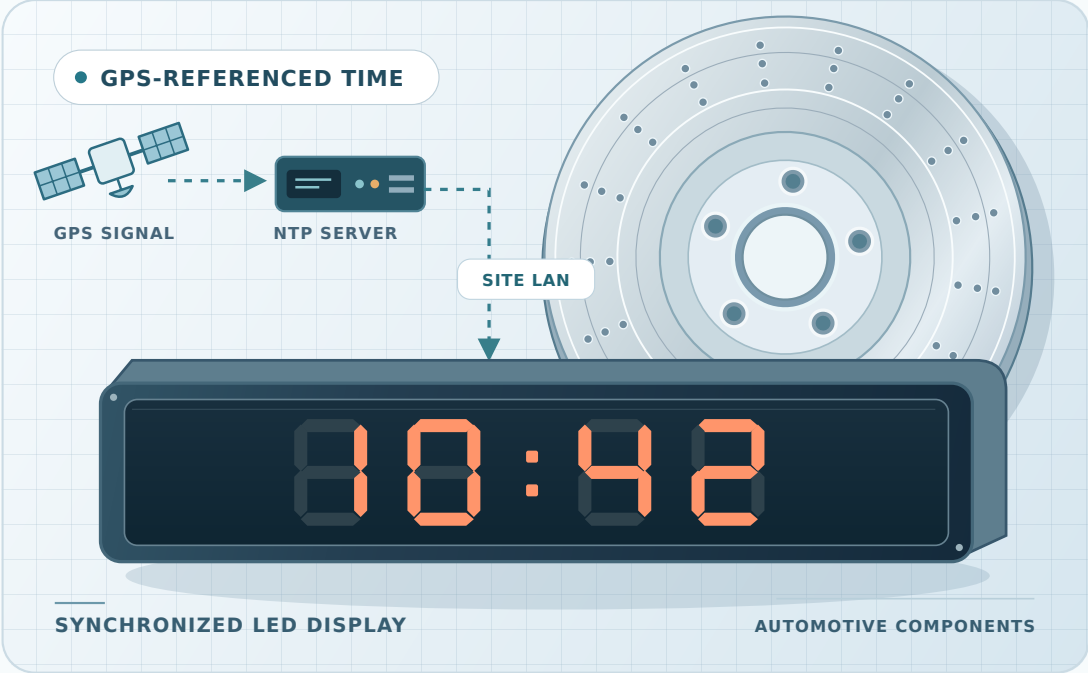
Synchronized Clock System for an Automotive Parts Plant

Mexico / GPS-referenced NTP distribution

One shared time reference for office teams, the workshop, warehouse operations and public corridors.



17
LED clocks

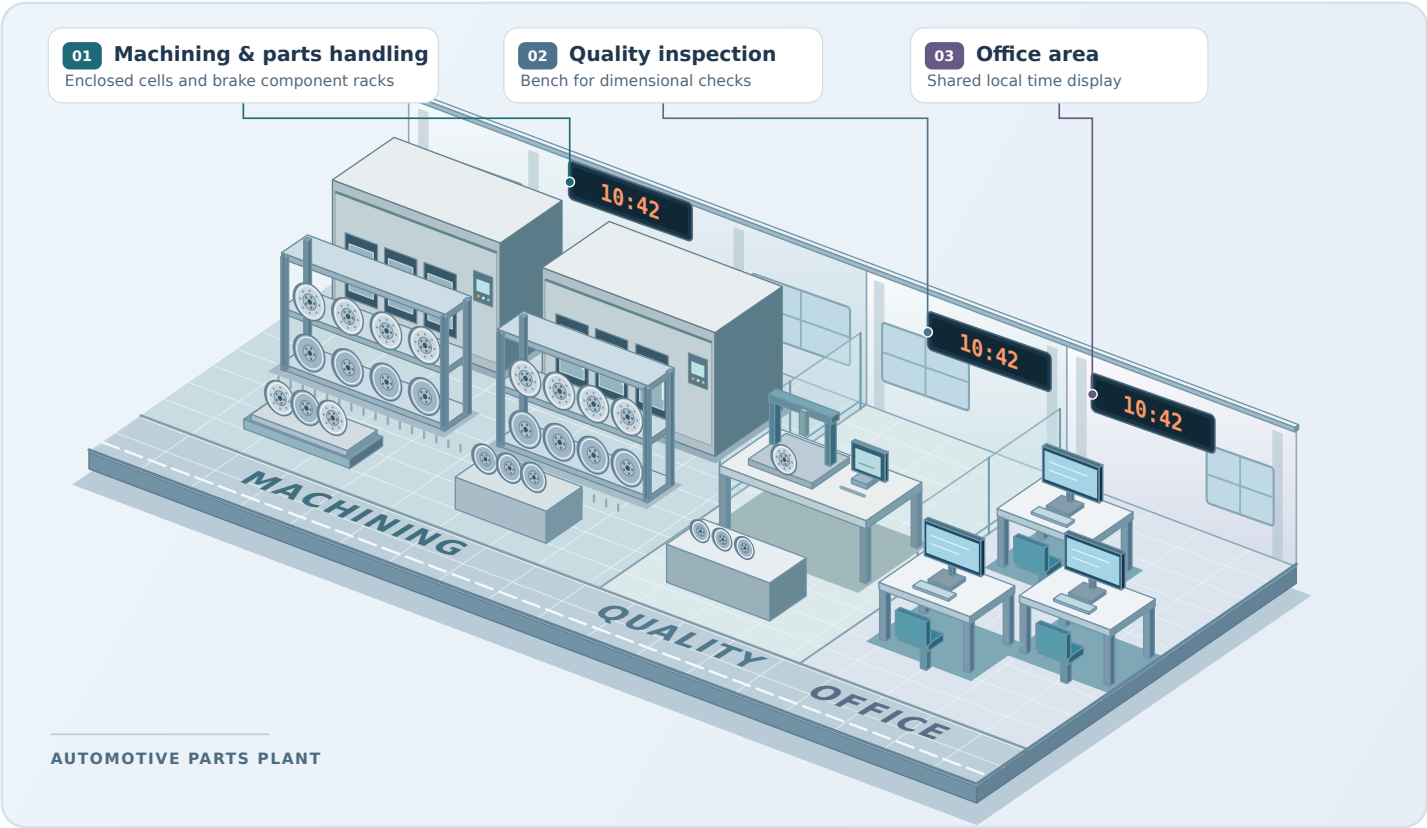
04
Functional areas

01
GPS time server

Topology 03 Floor plan 04 Equipment 06

One time reference across the plant

Synchronised LED displays serve the production floor, warehouse, offices and corridors.



A / 10 CLOCKS

Offices

One single-sided display per room, facing the occupied area.

B / 03 CLOCKS

Workshop

Three larger displays for machining, assembly and quality inspection.

C / 01 CLOCKS

Warehouse

One display facing picking, staging or dispatch work.

D / 03 CLOCKS

Public corridors

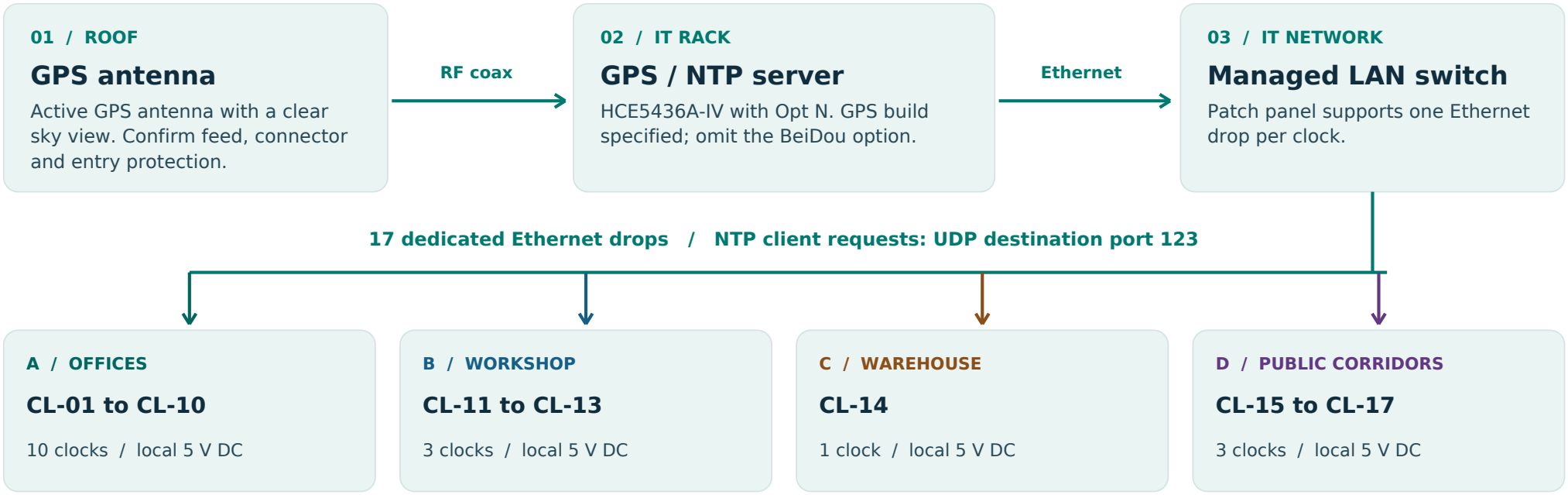
Three double-sided displays at decision points and shared entrances.

DISPLAY VISIBILITY

Check sightlines and glare in all areas. Test workshop and warehouse displays from the farthest normal reading position.

GPS to 17 wired NTP clocks

One GPS-referenced NTP server serves 17 Ethernet-connected clocks with separate local power.



DATA AND POWER

Each clock requires a local 5 V DC supply; PoE is not specified. Independent server power feeds are required if input redundancy is needed.

SERVICE CONTINUITY

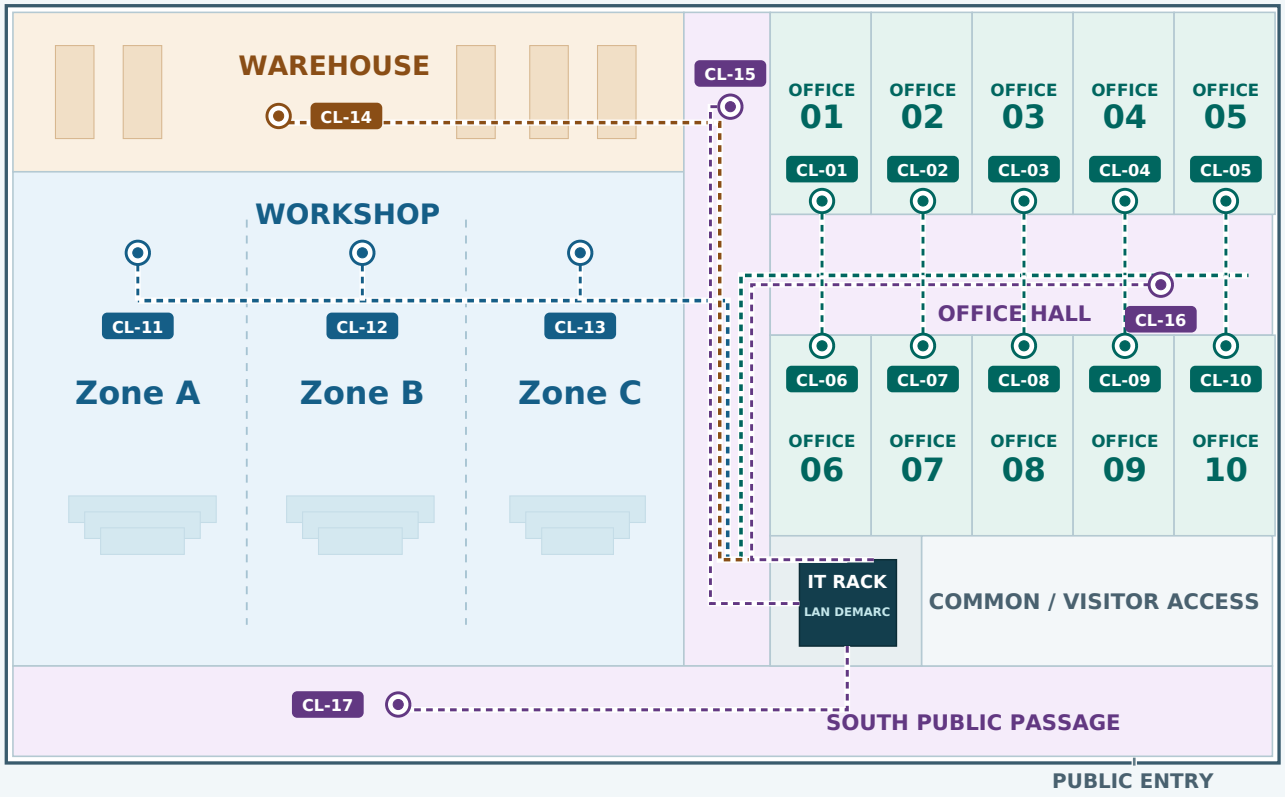
Single GPS/NTP source. Define the required continuity during loss of GPS, network or power. Specify UPS coverage or a secondary NTP source if required.

17-clock floor plan and connection layout

Concept layout only; not for construction.

GROUND FLOOR CONCEPT

NOT TO SCALE



PLAN KEY ● Office × 10 ● Workshop × 3 ● Warehouse × 1 ● Corridors × 3

Dashed guides show logical connections only; each clock has its own Ethernet drop.

INDIVIDUAL PATCHING

17 dedicated Ethernet drops from one site LAN switch

IT RACK / LAN SWITCH / 17 CLOCK PORTS		
P02	CL-01	Office 01
P03	CL-02	Office 02
P04	CL-03	Office 03
P05	CL-04	Office 04
P06	CL-05	Office 05
P07	CL-06	Office 06
P08	CL-07	Office 07
P09	CL-08	Office 08
P10	CL-09	Office 09
P11	CL-10	Office 10
P12	CL-11	Workshop zone A
P13	CL-12	Workshop zone B
P14	CL-13	Workshop zone C
P15	CL-14	Warehouse
P16	CL-15	Public corridor / north connector
P17	CL-16	Public corridor / office hall
P18	CL-17	Public corridor / south passage

P01 NTP server | P19 Optional uplink

P20-P24 Spare

Clock, outlet and switch-port schedule

Confirm outlets, switch ports and mounting positions at the site survey.

CLOCK	PROPOSED LOCATION	MODEL	DROP / PORT
CL-01	Office 01	HCE-01	D-01 / P02
CL-02	Office 02	HCE-01	D-02 / P03
CL-03	Office 03	HCE-01	D-03 / P04
CL-04	Office 04	HCE-01	D-04 / P05
CL-05	Office 05	HCE-01	D-05 / P06
CL-06	Office 06	HCE-01	D-06 / P07
CL-07	Office 07	HCE-01	D-07 / P08
CL-08	Office 08	HCE-01	D-08 / P09
CL-09	Office 09	HCE-01	D-09 / P10

CLOCK	PROPOSED LOCATION	MODEL	DROP / PORT
CL-10	Office 10	HCE-01	D-10 / P11
CL-11	Workshop zone A	HCE-10	D-11 / P12
CL-12	Workshop zone B	HCE-10	D-12 / P13
CL-13	Workshop zone C	HCE-10	D-13 / P14
CL-14	Warehouse	HCE-10	D-14 / P15
CL-15	Public corridor: north connector	HCE-10	D-15 / P16
CL-16	Public corridor: office hall	HCE-10	D-16 / P17
CL-17	Public corridor: south passage	HCE-10	D-17 / P18

24-PORT SWITCH ALLOCATION

P01: server. P02-P18: clocks CL-01 to CL-17. P19: optional site uplink. P20-P24: spare. Confirm uplink media and the final port map with site IT.

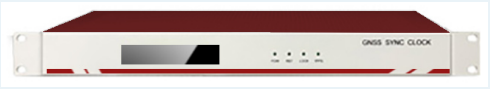
Equipment and supply scope

One GPS/NTP server with Opt N, ten single-sided LED clocks and seven double-sided LED clocks.

QTY	DEVICE / CONFIGURATION	DOCUMENTED CONFIGURATION	RELEASE CHECK
1	HCE5436A-IV + Opt N	GPS L1 C/A rack reference, 1U; NTP with Opt N. Two listed AC power inputs: 220 V ±20%, 47-63 Hz.	Verify Opt N serves 17 NTP clients. Confirm GPS build, antenna kit and RF run. Do not connect directly to a 127 V feed.
10	HCE-01 / offices	Single-sided LED; 3 in + 0.5 in digits; 450 × 220 × 28 mm; 5 V DC. NTP listed. Pendant or cantilever mounting.	Confirm wired interface, local adapter and mount, time-zone behaviour, and weekday language if required.
7	HCE-10 / shared spaces	Double-sided LED; 4 in + 1 in digits; 690 × 290 × 28 mm as listed; 5 V DC. NTP listed. Pendant or cantilever mounting.	Confirm as-built depth and weight, mounting and cable routing. Verify viewing distance, vibration, dust and glare suitability.
1 system	RF and network infrastructure	Matched active GPS antenna, coax and roof-entry protection. Allow 24 usable switch ports, 17 drops and local clock supplies.	Verify exact supply inclusions, cable loss, power outlets, panel ratings and rack load. Confirm which site equipment is included.

ORDERING REQUIREMENTS

Specify Opt N, the wired NTP clock configuration, 5 V power supplies and mounting hardware. Confirm the GPS antenna and coax kit in the final equipment schedule.



HCE5436A-IV

Server front view.



HCE-01 LED clock

Single-sided office model. Catalogue illustration.

Clock server catalogue (p. 4) **HCE digital clock catalogue (pp. 3, 6, 10)** **SyncClocks English catalogue**

Network, power and local time

Distribute UTC over NTP and configure each display for the plant’s local time.

01 / SITE IT

Clock network

Assign a server IP and clock VLAN or approved subnet. Use fixed client addressing or DHCP reservations if supported. Permit NTP to the server and replies; restrict management access.

02 / ROOF

Antenna and entry

Survey roof sky view, mechanical mounting, coax length and losses. Coordinate entry surge protection, bonding and weather sealing with site electrical.

03 / LOCAL TIME

Municipality and seasonal rules

Confirm the exact municipality and local UTC/DST policy with site IT. Verify the local seasonal time rules and test the clock firmware.

04 / POWER

Separate power and backup

Verify rack electrical service against the listed 220 V ±20% range. Use approved AC-to-5 V DC supplies at all clock points. Agree UPS scope for server, LAN and clocks if continuity is required.

05 / WORK AREAS

Mounting and environment

Confirm loads, clearances, back-to-back visibility and service access. Check dust, washdown, vibration and forklift clearance. Do not assume an IP rating or use the clocks as safety signalling.

06 / HANDOVER

Configuration record

Record device IDs, firmware, server and client IPs, switch ports, local time settings, power sources and asset numbers. Provide an as-built plan and configuration backup.

Mexico official time and seasonal rules | CENAM

RFC 5905 | NTP reference