

ENVIRONMENT

SWITCH ROOM MONITORING



PROBLEM

All switch rooms on the London train network located underground or in tunnels are subject to overheating due to no ventilation and inadequate remote air conditioning systems.

If the temperature rises above safe operating levels the equipment in the switch room shutdown, having a significant negative impact on train movements.



CHALLENGE

The challenge was to create a communication system that could monitor the temperature and humidity in switch rooms and raise alarms to request maintenance actions before the systems shutdown.

We also needed to address the communication of data from the switch room to our cloud-based servers with no Wi-Fi signal costs to hard wire CAT5/6 cable would be prohibitive.



SOLUTION

Our data harvester constantly collects data from sensors measuring room temperature and humidity, which is fed to our secure cloud-based servers.

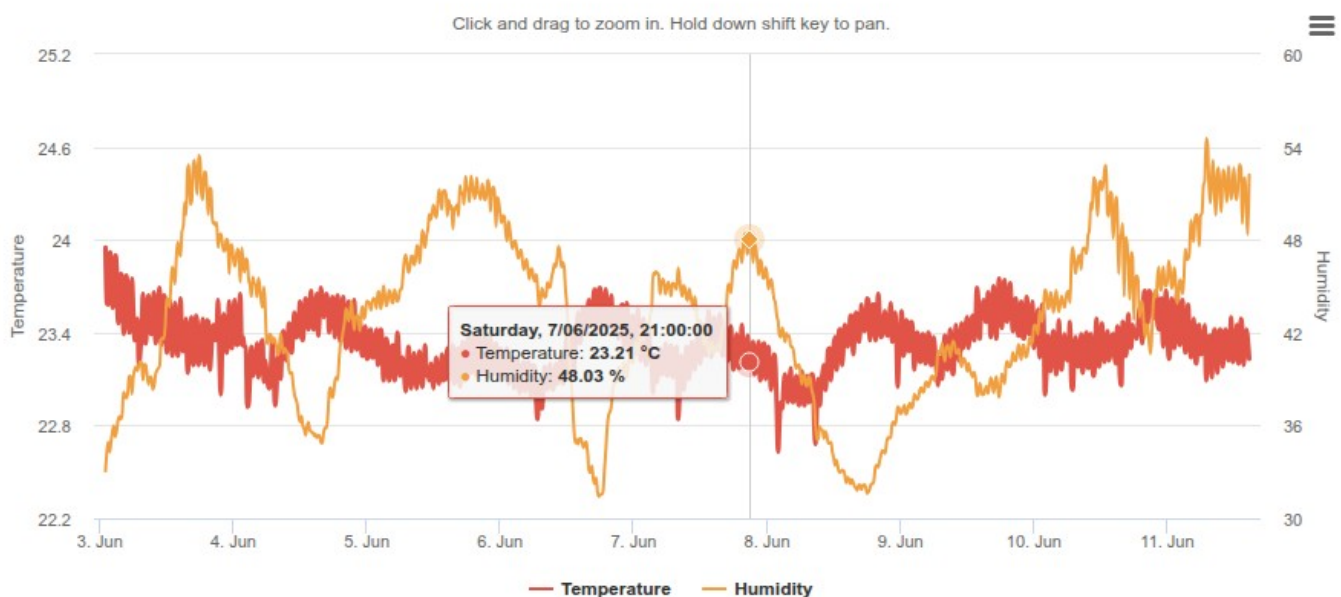
After the data is processed, we display the current real-time values together with graphs showing historic trends available on any web enabled device, with username and password protection.

To resolve the communication issue, we use long range radio from underground or tunnel locations until we have 4G/5G Wi-Fi access.

We can also connect directly with remote air condition units to monitor performance and asset health.

BENEFITS

- Allows pre-emptive maintenance actions prior to exceeding safe temperature operating levels.
- Reduces labour costs for continual manual checking of temperatures.
- Eliminate business disruption costs.



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