Condition monitoring for railways

Synaptec reduces operating cost and optimises availability for rail operators by providing earlier warning of failures in remote HV assets with our unique, passive sensors.

Synaptec's unique passive monitoring technology is already used in high voltage transmission systems for condition monitoring of remote and inaccessible HV assets because it buys vital time for operators to organise repairs to avoid catastrophic failures. This is ideal for rail operators who require earlier warning of electrical faults, power cable failures, excessive contact wire sag, or pantograph strikes – all of which are traditionally reliant on scheduled manual inspections that are hard to organise, expensive, infrequent, and limit revenue-generating traffic.

Synaptec provides wayside monitoring of rail traffic, Overhead Line Equipment (OLE) and power system assets in remote and inaccessible locations, to provide earlier warning of failures, avoiding loss of services and revenue and overcoming the limitations of manual inspection.

Synaptec's distributed sensing platform is retrofittable and combines electrical and mechanical sensors connected by optical fibre over unmatched distances. One synchronous and interoperable technology platform integrates:

- Rapid detection, characterisation, localisation, and protection response to electrical faults
- Asset Group Analytics to identify impending failures, inefficiencies, degradation, and loss of power in real time
- Alarms to warn of dangerous loss of tension in the contact wire
- Monitoring of passing trains to detect wheel and rail anomalies

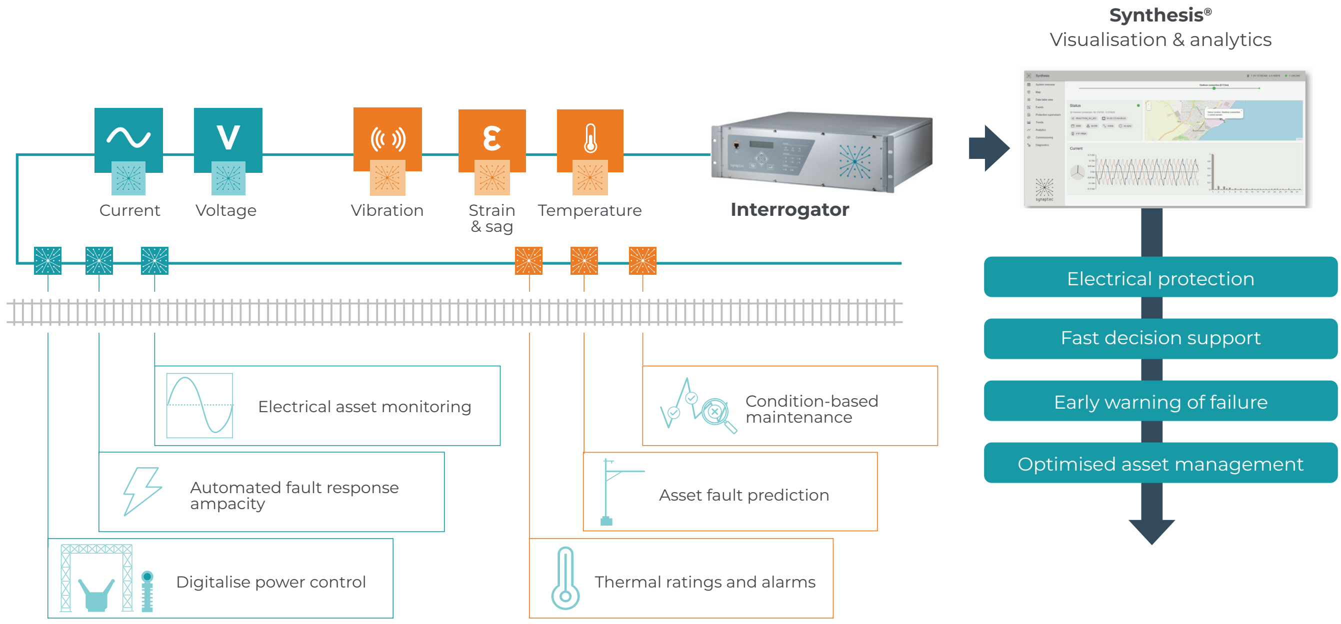
Synaptec overhead line sensor installation

Synaptec overhead line sensor installation

Synaptec systems combine current, voltage, temperature, vibration, and strain monitoring to provide synchronous, permanent, and electrical and mechanical monitoring of sectional electrical supply, rails and OLE on transport networks anywhere.

Up to 10 sensors can be installed over a 60 km range from centrally installed Interrogators, without any need for control power, data networks, or expensive civil works at the point of measurement. Because they are passive, the footprint, size and weight of sensors has minimal impact, allowing live visibility and control for minimal environmental impact and cost.

Remote condition monitoring



Questions? Get in touch with our team to discuss how our technology can benefit you:

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