

Permanently installed monitoring solution for pipelines

Many plants have greater lengths of pipes and pipelines than they have the resources to inspect. Insulated pipes may suffer corrosion under insulation, which cannot be observed by visual examination.

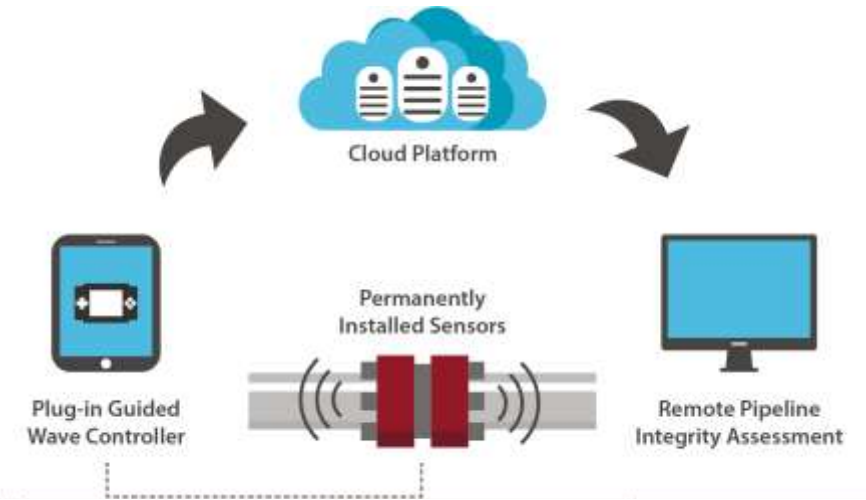
Many pipes are inaccessible for at least part of their length, because they are in culverts buried in the ground, or are in elevated racks. Depending on product, some pipes may also suffer from internal corrosion or erosion.



The solution is to combine the long-range search capabilities of ultrasonic guided wave testing (GWT) with widely spaced permanently installed sensors. Once installed, data may be gathered periodically by service-trained technicians and continued pipe integrity determined. Areas requiring action can be highlighted and prioritised.

The system consists of a low-cost sensor array, which is clamped to the pipe surrounded by a protective enclosure, and a portable dedicated ultrasonic unit, which is pre-programmed to collect guided wave data when plugged into the sensor array.

Once set up the test technician requires no specialist knowledge of guided wave testing to gather periodic inspection data. Data analysis and reporting of pipe condition is provided by the specialist service provider managing the iPerm system via a remote cloud-based link.



- Greater pipeline coverage than can be achieved by using local inspection methods.
- 100% coverage of pipe wall thickness using ultrasonic guided waves.
- Low-cost non-invasive installation of the sensors, leading to reduced access costs for subsequent examinations.
- Low-cost data collection using semi-skilled personnel and automated data gathering equipment.
- Repeatable test conditions arising from permanently installed sensors.
- Identification of trends of degradation through accumulation of periodically collected data, leading to improved maintenance planning for pipework systems.
- Defect detection capability equal to or better than one-off guided wave tests on pipelines, down to 5% cross-section loss.





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