



VortexScan

Robotics assisted rapid NDT of large concrete structures

Problem

Large public infrastructure facilities like dams, cooling towers and bridges use cement as the main building material. These large assets **have begun to age** and are in need of frequent periodic inspection, by law, to ensure their integrity.

NDT of these structures is **currently carried out** utilizing

access techniques such as abseiling and scaffolding which is **time consuming, very costly to carry out** and **hazardous for inspectors**.

Furthermore, utilizing the current NDT techniques would necessitate that, **facilities are shut down during inspection**, causing significant revenue losses.



Solution

The **VORTEXSCAN system** will be based on a **vortex robot** capable of carrying specially developed NDT equipment; an **ultrasonic testing (UT)** unit and a **ground penetrating radar (GPR)**.

The **robot**, with a carrying capacity of up to 2kg, will be easily operated remotely on vertical curved concrete walls.

The **NDT data** will be fused, processed and represented in real time so that an inspector can assess the existence of potential defects.





Benefits

Application of the VortexScan inspection system provides numerous benefits including:

- ✓ In-situ inspection, with **no need to shut down the facility**
- ✓ **Rapid & consistent inspection via robot**
- ✓ **Avoidance of hazardous working**
- ✓ **Advance warning** of manufacturing or service **defects**

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