

Automatic Marking System for Highway Infrastructure Inspection

ID: 2015-010

Executive Statement:

An innovative system that automates the marking of defects on infrastructure surfaces, improving efficiency and accuracy.

Technology Overview:

This technology is an automatic marking system designed to identify and mark areas of concern on highway infrastructure, such as bridges and pavements, using non-destructive measurements of surface properties. It leverages impedance and impact-echo technologies for subsurface material characterization and mapping, aiming to replace manual marking methods with an automated, data-driven approach. The system is capable of being mounted on a moving platform and utilizes location tracking for precise marking, adaptable to various marking materials.

Key Advantages:

- Automates the defect marking process, significantly reducing manual labor and time
- Enhances accuracy and reliability of infrastructure inspections with non-destructive testing methods
- Capable of precise location tracking and marking, ensuring high operational efficiency
- Flexible in terms of marking materials, supporting paint, ink, or dye with optional characteristics
- Supports large-scale inspections, ideal for extensive highway infrastructure networks

Problems Addressed:

- Time-consuming manual processes of marking defects on large infrastructure surfaces
- Inaccuracy and inconsistency in manually identifying and marking areas of concern
- Challenges in maintaining operational efficiency and precision during large-scale inspections

Market Applications:

- Highway and bridge maintenance and inspection
- Structural integrity assessments for large infrastructure projects
- Non-destructive testing markets, particularly in civil engineering