

Calibration / Verification

Image & Transverse Profile Collection & Analysis

Problem Title

Calibration and verification of pavement distress derived from images and transverse profile.

Research Problem Statement

The accuracy of existing data collection methods is not traceable or uniform. The state highway practitioners need a way to assess the accuracy of data collection & analysis for imaging and transverse profile.

Research Objectives

1. Determine methods and approaches to assess the accuracy of the system and the subsystem components.
 - a. Develop and experimentally verify methods
 - b. How to assess methods
 - c. What is the appropriate accuracy to use for implementation
2. These methods need to be traceable, objective, practical, and transparent.
3. System level accuracy statement

Task: The research will include the following tasks:

1. Survey and review the current state highway agency (SHA) practices regarding standards for calibration and verification
2. Identify gaps in AASHTO protocols and draft provisional standards accordingly.

Final Product:

The final product of the research is a set of provisional AASHTO standards addressing SHA's needs regarding imaging and transverse profile collection and analysis calibration, verification, and accuracy.

Estimate of Problem funding & Research Period

Up to \$250,000 in 2 years.

Notes

1. Calibration – (equipment) calibrating the sensors. Methodology of calibration is equipment detail intensive.
2. Verification – How to verify the ground truth of images/transverse profile?
 - A. Approach 1: Based on standards (ISO)
 - B. Approach 2: We know what the rut is on the road and make sure the equipment gets the same measurement.