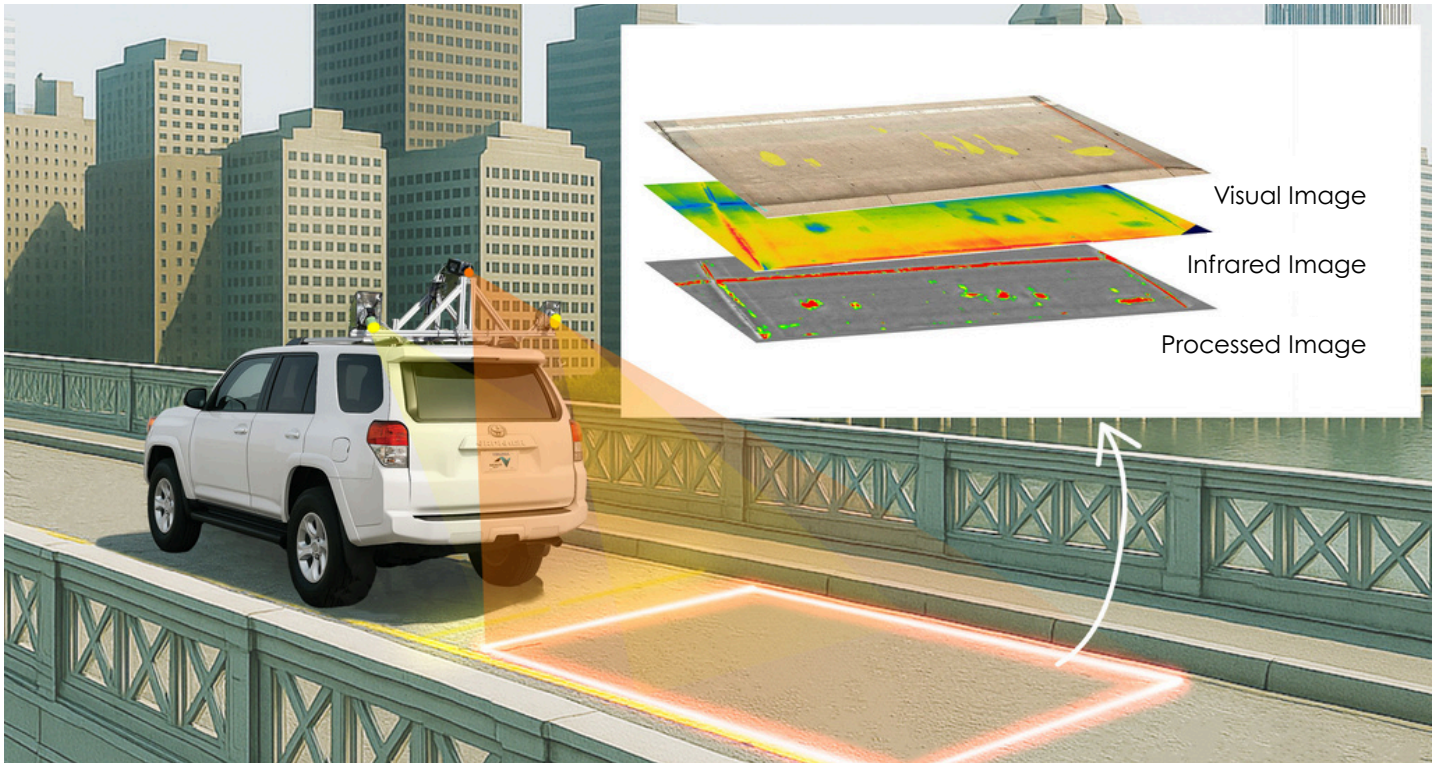
# DTSS

## Deck Top Scanning System

Visual Camera & Infrared Camera

## What is DTSS?

DTSS is a vehicle-mounted camera system that captures both infrared thermography (IR) and high-resolution visual images at highway speeds. The dual-imaging system is designed to detect both surface and subsurface defects in concrete bridge decks by measuring slight deviations in the temperature of delaminated/debonded areas.

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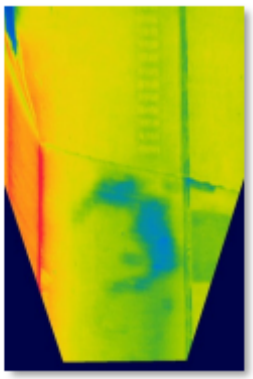
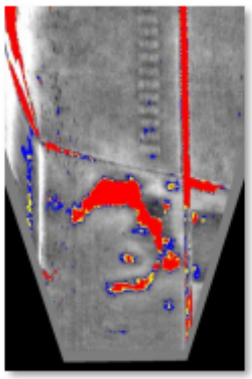
## Benefits of Using DTSS

DTSS captures data at highway speed, which minimizes the duration of hands-on inspections that require inconvenient lane closures and expose inspectors to unsafe environments for prolonged periods. The thermal imagery can quantify delaminating portions of concrete while the visual imagery acts as both a proofing mechanism and a means to detect hairline cracking on the concrete surface. Discoloration and debris will therefore not influence the IR scanning performance. Proprietary filtering functions (see Processed Image below) help analysists find areas with temperature differentials.

Visual Camera & Infrared Camera

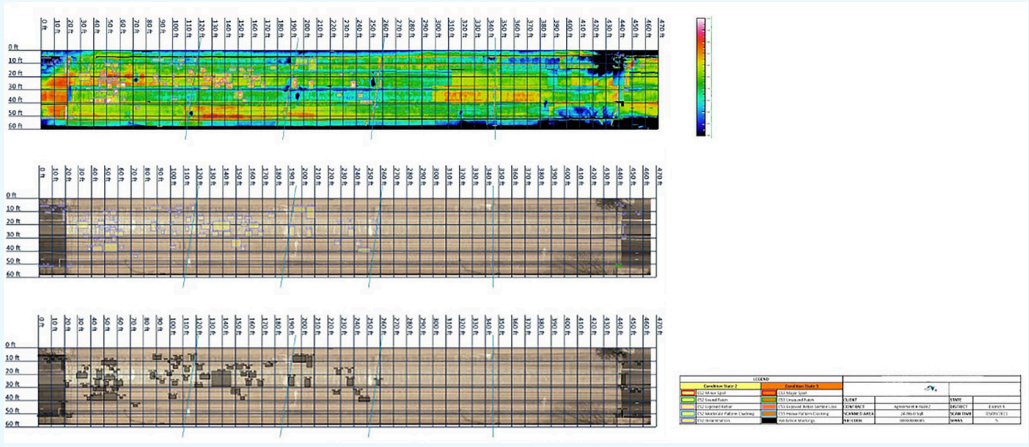


Infrared Image

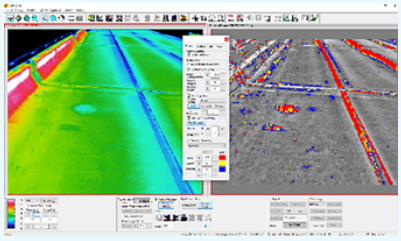


Processed Image

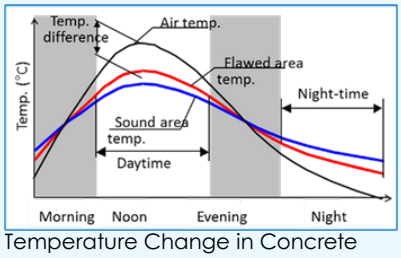
## Deliverable



Sample Deliverables



Infrared Image Analysis Software Ir-BAS




Temperature Change in Concrete

## Accreditations

"Since 2012, The University of Central Florida has been partnering with NEXCO - West USA, Inc. to conduct a successful on-site pilot application using the bridge deck scanning technology. The Florida Department of Transportation found that the technology has excellent potential for transportation agencies to improve and enhance the repair decision making process."

**F. Necati Catbas, PhD, P.E.**
**Professor of Civil Engineering**

"Since 2014, Florida's Turnpike has participated in two on site bridge deck scanning projects with NEXCO-West USA, and has successfully identified deficiencies within our target structures. We agree that the use of the technology has significant potential for transportation agencies to improve their corridor/network level bridge deck inspection programs."

**Aran M. Lessard, P.E.**
**Structures Maintenance Engineering**

"The experience provided us with insight into the challenges of scanning decks of long span bridges that carry large traffic volumes. The NEXCO scan emerged as the only feasible tool, as currently available nondestructive tools were clearly observed to be too slow and impractical. Therefore the opportunity of exploring a realistic scenario by scanning a real interstate viaduct proved priceless. "

**Dr. Emin Aktan, PhD**
**Intelligent Infrastructure Alliance**

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