Non-Destructive Bridge Inspection Technology by Infrared Thermography

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Expressway network in Japan

- Used be a government agency (Japan Highway)
- Privatized in 2005 and became NEXCO-West
- Established an office in Washington D.C. in 2011
Our Team (@Vienna, VA)
Motivation

Routine inspection every 2 years (mainly by Visual and hands-on inspection)

- Chain Drag during Lane Closure
- Measuring Crack Spacing
Current practice for bridge deck inspection

Chain Drag and Hammer Sounding technique are widely used.
Deck Top Scanning System (DTSS)

- IR camera
- Line scan camera

Raw and processed IR image

Visual image

13” (4 m)
Infrared Thermography Technology
Example in Virginia

Thermal Image

Software Output

6 in. interval
Deficiency Map for Bridge Decks

- Deficiency Map
- IR Software Output
- IR Thermography
Applications in U.S., Brazil and France
Introducing American Product to Japan
Road Zipper System in the United States

Golden Gate Bridge (San Francisco)

Ben Franklin Bridge (Philadelphia)

I-66 Theodore Roosevelt Memorial Bridge (Washington D.C.)
Introduction of Road Zipper System to Japan

I’m afraid of using a product that has never been used in Japan.
Bridge between U.S. and Japan

"Everybody wants to be the second."

We are serving as a ‘Bridge’ between U.S. and Japan to exchange latest technologies for their mutual benefit.
There are those who look at things the way they are, and ask why... I dream of things that never were, and ask why not?

Robert Kennedy
Questions?

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