3D Mobile Inspection of Bridges

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Outline

• Background
• Element Level Inspection
• Current Practice for Bridge Inspection
• Problems
• Our Solution
• Software Walkthrough
• Conclusion
1993: The FHWA Created A Task Force Charged With Developing The Commonly Recognized Elements (CoRe Elements)

1995: CoRe Was Adopted By AASHTO T-18

2010: New Element model was introduced (4 condition states, removal of smart flags and NBE, BME, ADE)

Starting 2015: In addition to NBI, each State and Federal agency should also provide element level bridge inspection data for bridges on the NHS to the FHWA. (MAP 21)
Advantages of Element Level Data

• More granular information about bridge comparing to NBI
• Improved bridge management decision-making through enhanced deterioration forecasting and bridge condition evaluation
• Enables the development and use of meaningful performance measures
State of Element Data Collection

* Based AASHTO 2016 Survey (43 states answered)
Current Practices for Inspection

Paper forms

Tablet based forms
Problems

• Inspectors have to carry inspection manuals and previous inspection reports
• Photos are saved and uploaded separately
• Extra time is required to manually enter data into BMS
• Significant time required for QA/QC
• Inspection process is inefficient
• Defect location data is not recorded
One-Stop Shop Solution: InspectX
Notable Features

• Mobile bridge inspection
• State-of-the-art 3D visualization
• Defects with location and photo references
• Simple yet effective review feature
• Sync with existing Bridge Management Systems
• Offline/Online feature for inspection without internet connection
Improvements to bridge inspection

- Carry forward previous bridge inspection report
- Digital reference of AASHTO Element Level Inspection Manual
- Defect information including photos are in one place
- Data can be synced with existing bridge management systems
- Reduce QA/QC review time
- Record defect location
Are states interested in 3D Mobile Inspection?

* Based AASHTO 2016 Survey (43 states answered)
Live Demo

https://www.youtube.com/watch?v=NJTyIRU5tZU
Conclusion
Benefits to Inspector

• User-friendly mobile application
• Lower learning curve in element inspection
• Reduction in inspection time
• Improvement in data accuracy
• Minimize redundant data entries
Benefits to State Agencies

- Maximize efficiency of inspection forces
- Reduction in inspection and training costs
- A more efficient review process
- Effective monitoring of bridge deterioration
- Everything will be digitally stored in one DB (Defects, Images, ...)
- Seamlessly synchronize with BMS
- Significant save of time for future inspection
- Accurate deterioration model based on detailed data
- Report accurate data to FHWA
Progression Of Deterioration
Questions?

www.bridge-intel.com

Request a Demo on our website.