

IMAGECAT TASK GROUP OBJECTIVES AND PLAN

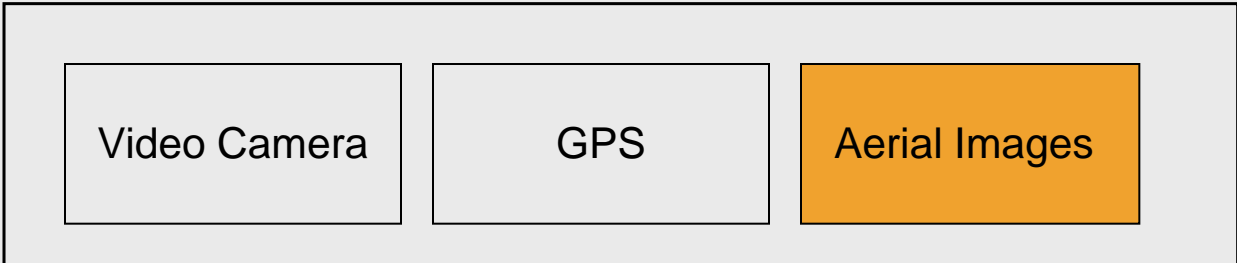
- ❑ Objectives: 1) Modify AMPIS (Automated Management Pavement Inspection System) for bridge deck surfaces (AMBIS), and 2) link AMBIS to the UNCC-IRSV system
- ❑ Plan: Create a set of test cases that can be used to calibrate and validate AMBIS results to bridge decks; and, work closely with the IRSV team to fully integrate AMBIS results into the IRSV system

TASK GROUP CURRENT PROGRESS

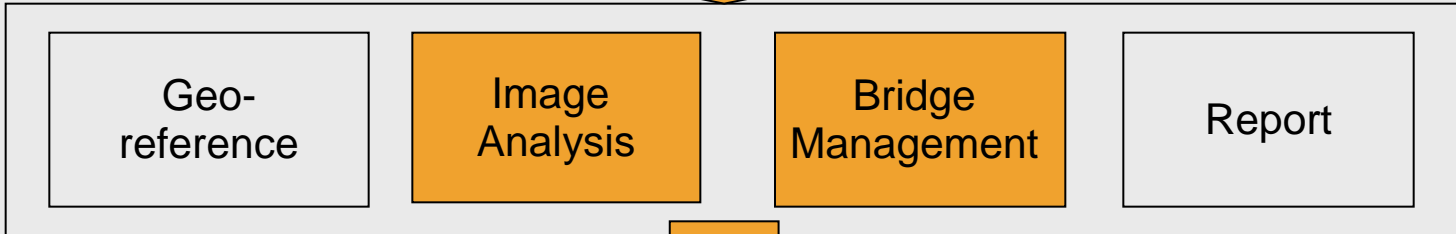
- ❑ Linked AMBIS and IRSV by using the same bridge referencing system. This allows for easier data transfer between programs.
- ❑ Imported TIGER street data into AMBIS for study region
- ❑ Modified visualization module so that high-resolution aerial imagery for individual bridges can be displayed
- ❑ Improved geo-referencing system for ground-based photos from video streams by incorporating an interpolation scheme between adjacent gps readings
- ❑ Improved image processing algorithms for detecting and classifying cracks (using ground-based imagery) and joint separations (using high-resolution aerial imagery)

New System Architecture - AMBIS

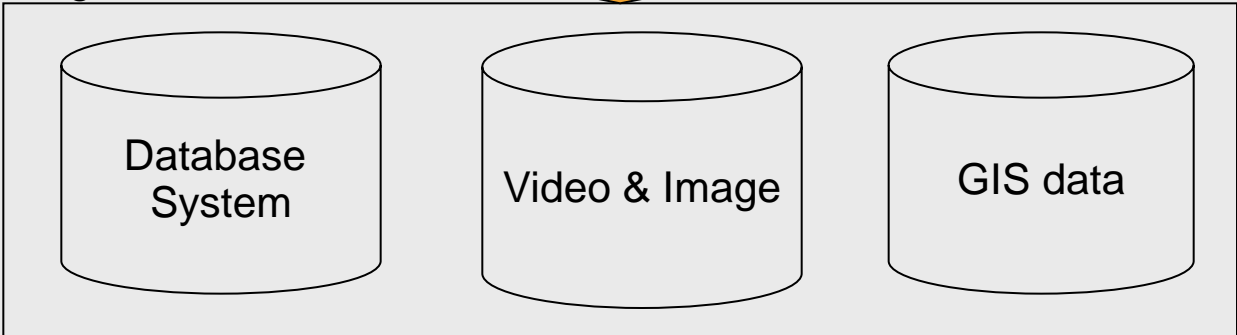
Data Acquisition



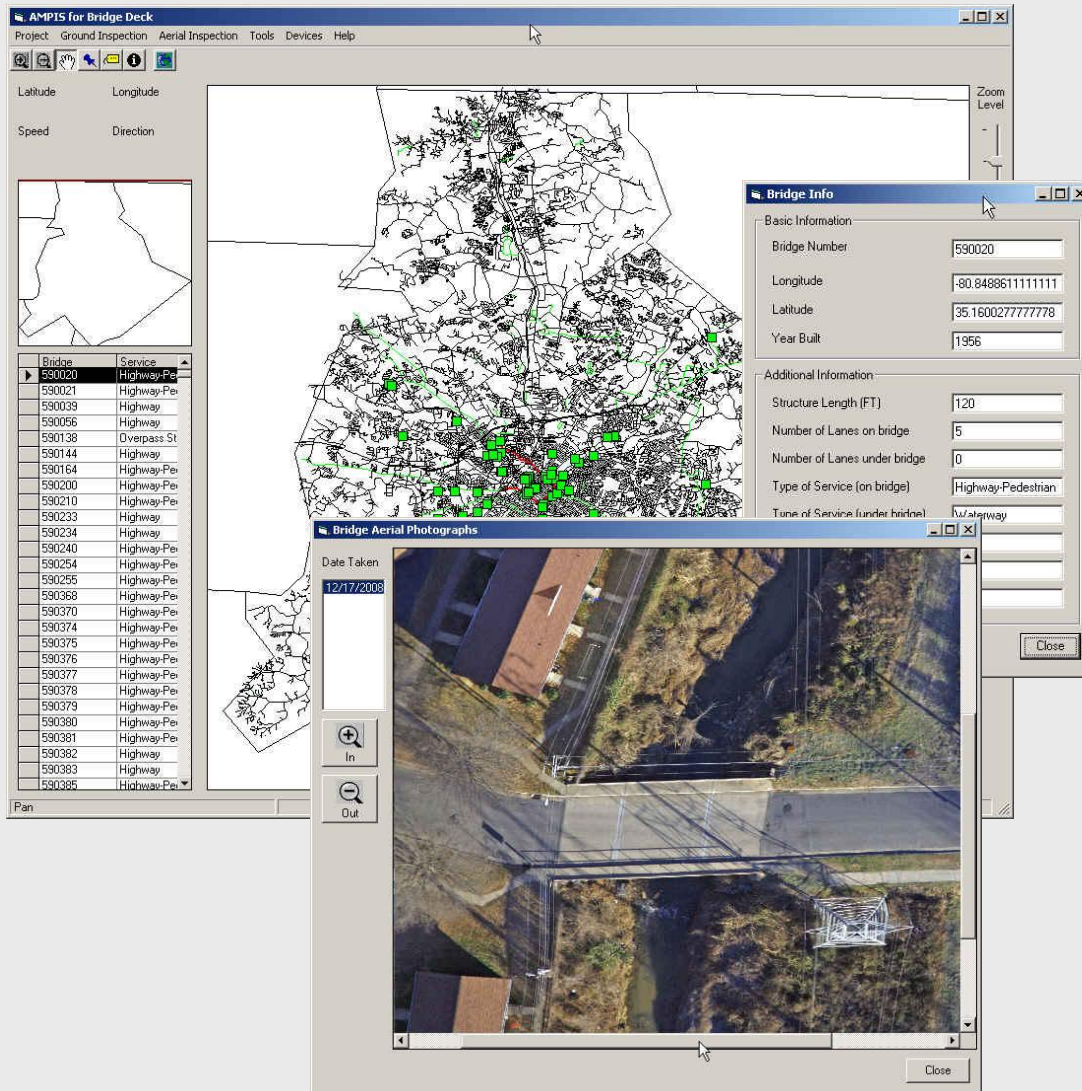
Core Analysis



Data Management



Organizing Bridge Management Information



- Geographically locate bridges
- Display high-resolution aerial photography
- Integrate with GIS platform

Detecting Surface Cracks

AMPIS for Bridge Deck

Project: Ground Inspection Aerial Inspection Tools Devices Help

Latitude Longitude
Speed Direction

Rosewood Park
Woodberry Trail
Maffard Creek Church
Troyon

Bridge	Service
590020	Highway-Pei
590021	Highway-Pei
590039	Highway
590056	Highway
590138	Overpass St
590144	Highway
590164	Highway-Pei
590200	Highway-Pei
590210	Highway-Pei
590233	Highway
590234	Highway
590240	Highway-Pei
590254	Highway-Pei
590255	Highway-Pei
590368	Highway-Pei
590370	Highway-Pei
590374	Highway-Pei
590375	Highway-Pei
590376	Highway-Pei
590377	Highway-Pei
590378	Highway-Pei
590379	Highway-Pei

Time: 7/16/2008 8:12:09 AM
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Latitude: 35.31847
Data Path: G:\Projects\AMPIS\src\data\inspections\MSLE0802
Comments:

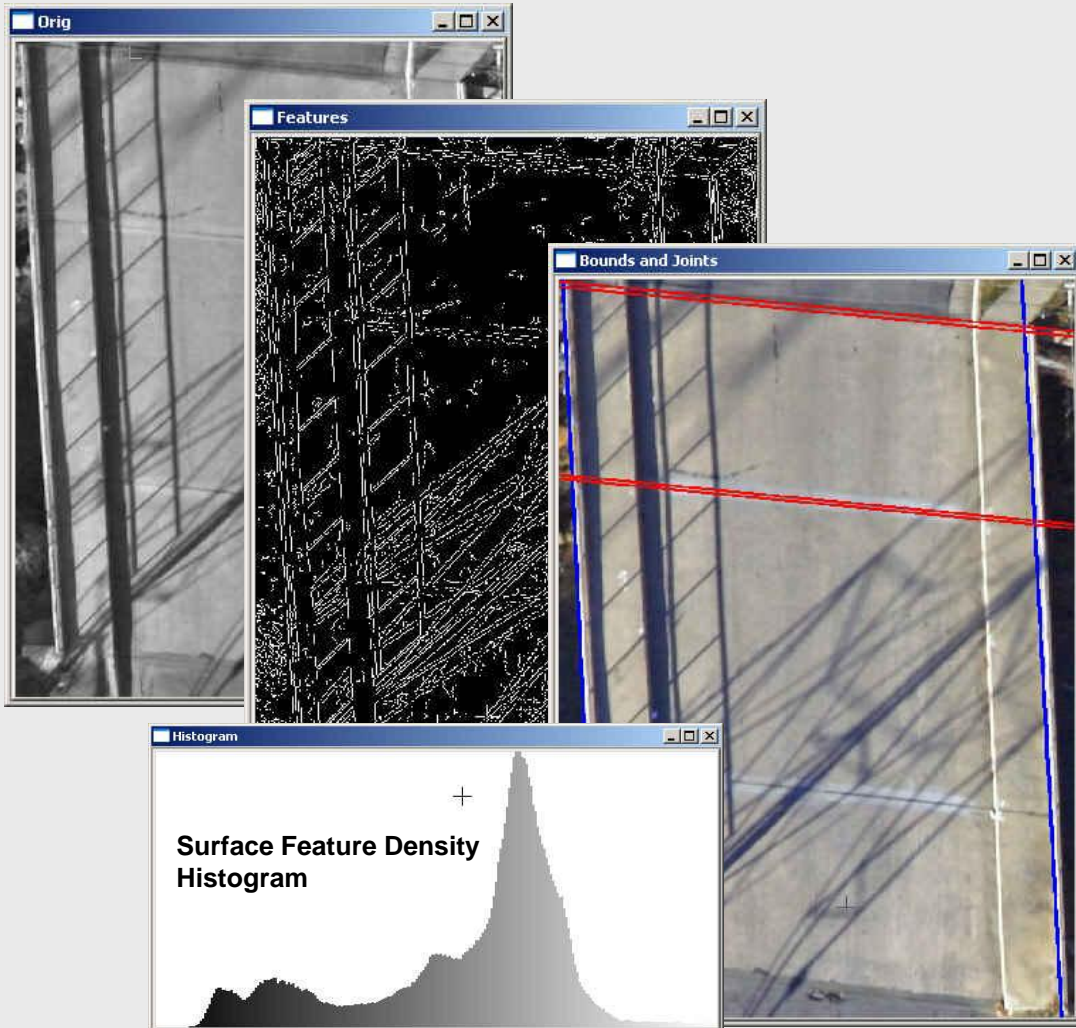
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Distress: Longitudinal Density: 2
Severity: MEDIUM Deduction: 14

Images: CAP000017.bmp
CAP000017_thin.jpg

Prev Next Update Close

- Acquire geo-referenced images for all bridge decks
- Apply advanced image analysis techniques to automatically detect bridge deck damage
- Compile bridge distress statistics, i.e., extent of surface cracks

Quantifying Joint Separations



- ❑ Delineate deck boundaries (i.e., sides)
- ❑ Filter noise (e.g., shadows, cars)
- ❑ Detect bridge deck joints
- ❑ Compile bridge distress statistics (e.g., extent of joint separation)