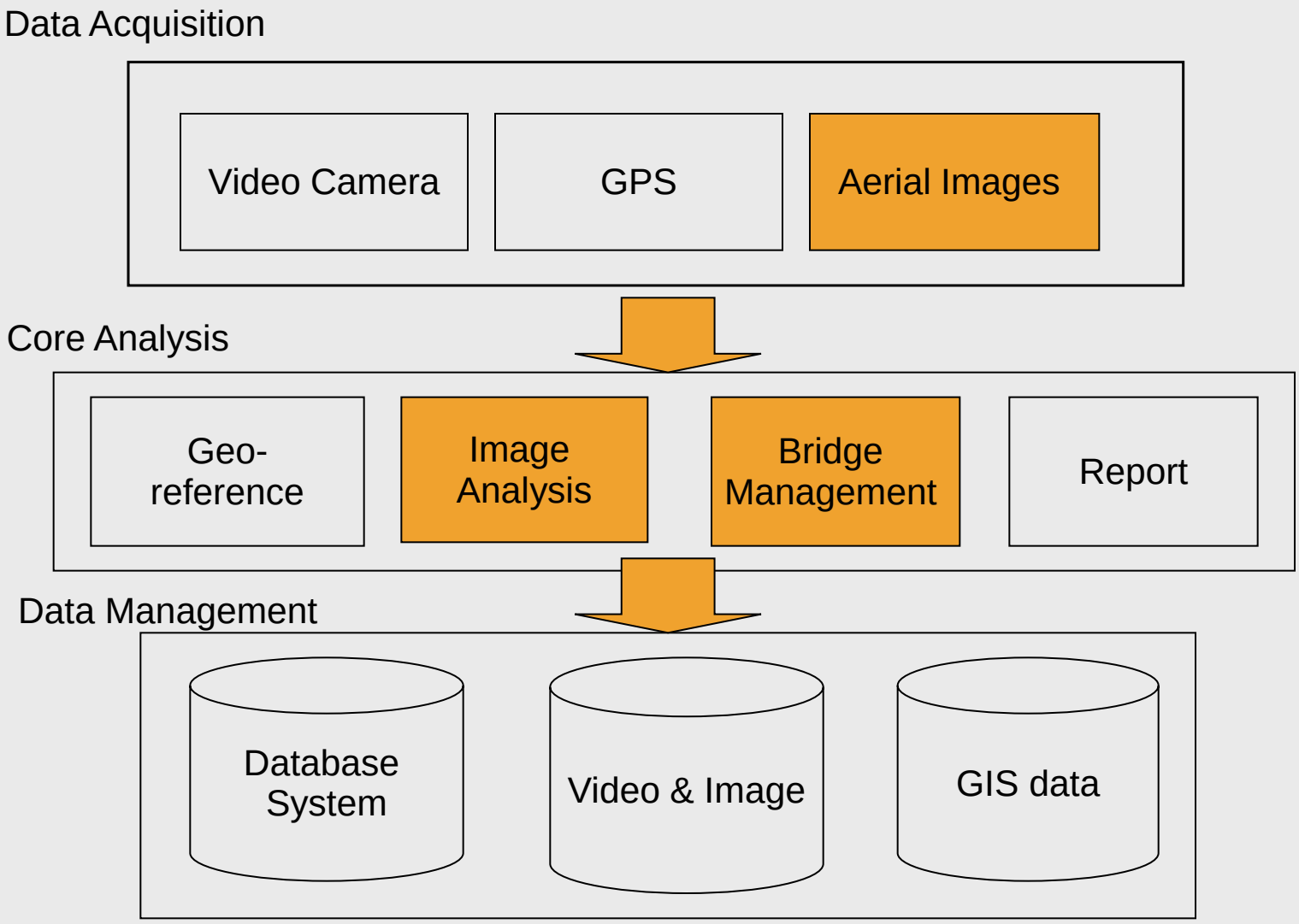
IMAGECAT TASK GROUP OBJECTIVES AND PLAN

- 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

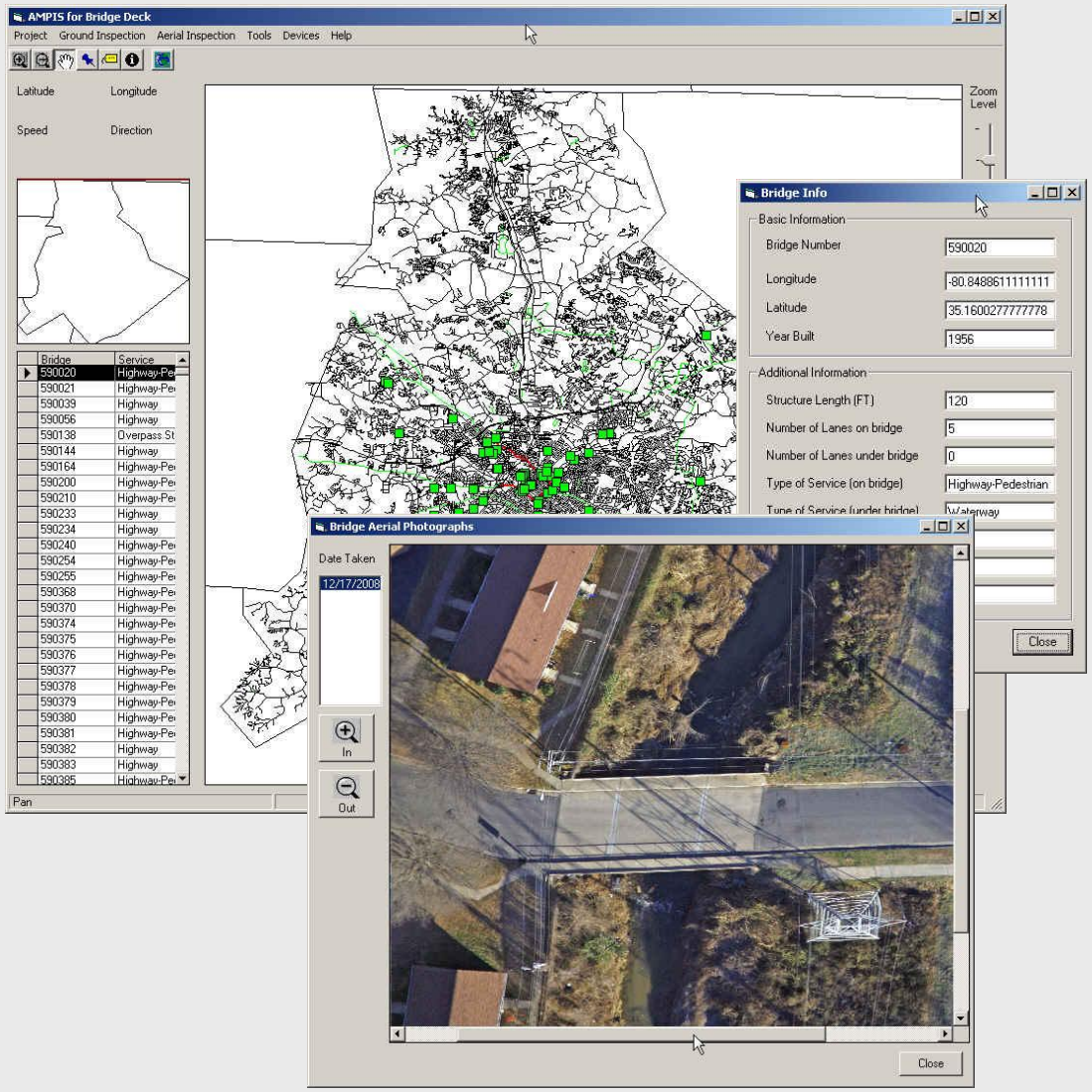
TASK GROUP CURRENT PROGRESS

- 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

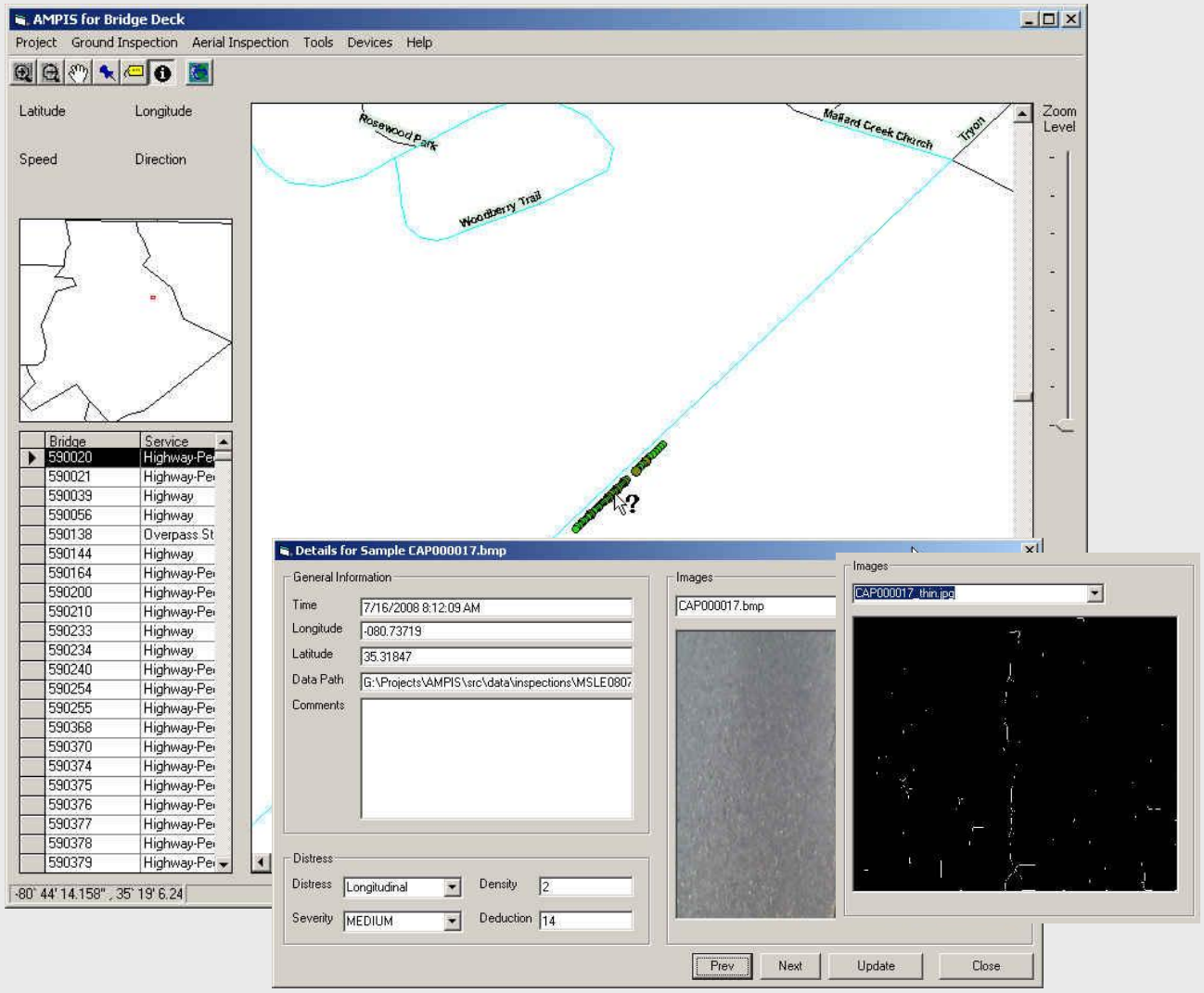


Organizing Bridge Management Information



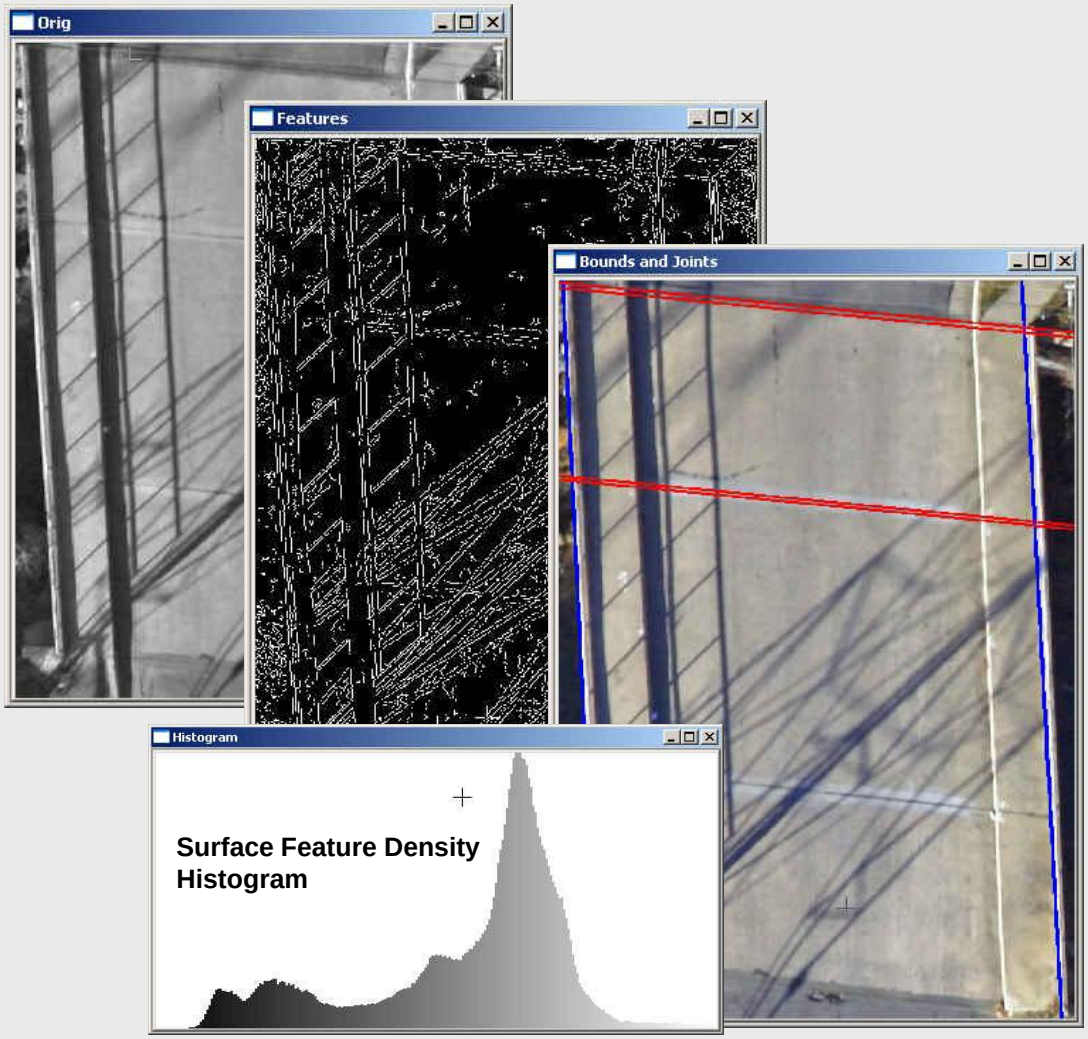
- Geographically locate bridges
- Display high-resolution aerial photography
- Integrate with GIS platform

Detecting Surface Cracks



- 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)