1.4.1 GIS-Based Roadway Video-logging using a Firewire Camera Combined with Satellite Differentially Corrected GPS

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A roadway characteristics database is vital to a state highway agency's planning function. A common means to access these roadway characteristics is through a linear referenced geographic information system. Many highway agencies supplement their roadway characteristics data with a video log that superimposes attribute data such as mile-point marker and roadway grade data. In many cases, this video data is stored on VHS tapes. This paper discusses a methodology to integrate a digital video log into a GIS-based roadway characteristics database. Location data is geocoded using a global positioning system combined with real-time satellite based differential correction. A firewire camera provides high speed video streaming. The video and GPS data streams are combined simultaneously into a GIS as point data. An application of the system was implemented in Gulfport, Mississippi one month after the city was devastated by Hurricane Katrina. The paper compares the video logging methodology discussed in this paper with other methods including ARAN. The paper discusses how simple interpolation is used to fill in coordinates in the event of GPS signal loss in urban terrain. A distance-measuring instrument can also be used to further enhance positional data.