High Volume Network Attached Storage For Photolog Libraries

PI: Adam Zofka, Assistant Professor, University of Connecticut Co-PIs: John Ivan, Professor, University of Connecticut  Eric Jackson, Assistant Research Professor, University of Connecticut

Summary

The Team proposes to acquire a high-volume (48TB) Network Attached Storage (NAS) server to be used to hold and manage Photolog libraries. The NAS server will be installed in the Transportation Systems Laboratory located in the Castleman Building Room 210. Photolog libraries are collected annually since the 1970’s by the Connecticut Department of Transportation. Photolog libraries contain front and pavement images as well as geometric data and other measurements of the state highway system in Connecticut. Over the years, the Photolog data have served as an invaluable resource to dozens of state and federally funded projects at UConn. With the rapid development in digital imaging and data acquisition in the last decade, the demand for Photolog storage sharply increased. Currently, a one-year Photolog library occupies approximately 4TB. The entire Photolog data is currently stored on three separate mini-servers and run by the service application installed on the separated server managed by the Civil and Environmental Engineering (CEE). This solution, although working well at the current moment, is rather temporary, fairly unreliable, requires high-maintenance and annual or bi-annual investment into a new server. The proposed NAS provides more centralized and permanent storage that is easy to expand in the future. In the proposed solution, the entire Photolog service will be run internally on the NAS server, eliminating the need for the CEE server, simplifying operations and reducing network traffic. Photolog libraries provide unrestricted virtual access to the entire state highway system in Connecticut. Researchers have been using Photolog data and images to conduct temporal inventories of highway elements, such as number and type of access driveways, presence of sidewalks, on-street parking, guiderails, pavement condition, roadside hazards and building setbacks. Such temporal databases are very unique and not available anywhere else in Connecticut. When these time-stamped databases are combined with other transportation and social data, such as accidents reports, construction materials, bus ridership, etc, their impact can be directly interpreted and quantified. While many studies have previously used Photolog resources, there is still a vast potential for the new inter-disciplinary projects – both state and federal, that are aligned with the theme of the Center for Transportation and Livable Systems (CTLS).