



Baltimore Traffic Management Center

Baltimore was facing increasingly severe traffic congestion that was proving difficult to manage in the absence of newer technology and capabilities. The situation prompted the Mayor's Office, together with the State of Maryland Department of Transportation and the Baltimore Transportation Department, to secure funding to re-build the existing Transportation Management Center (TMC), and upgrade related infrastructure.

The Challenge

The original TMC was hampered by outdated equipment and capabilities: the analog video surveillance system was displayed on a rack of four CRT monitors at a single desk; a separate monitor was dedicated to TV news and weather information. The entire system was run by an old main frame computer running non-intelligent signal controllers. Information available in the main control room was confined to this space and could not be viewed or shared with any other location.

Siemens ITS was enlisted to replace and upgrade the capabilities of the central traffic signal system, as new 'intelligent' signal controller equipment and LED signal lights were also being installed. Part of their mandate was that the information visualization system should deliver a robust

and significantly more flexible system, providing dynamic information access, display and sharing beyond the walls of the control room. Scalability was another major consideration to support future expansion and evolution in the monitoring infrastructure as well as the use of the TMC.

The Solution

The Activu distributed visualization solution links several different areas in the facility, encompassing the TMC main control room floor, the Main Conference Room, an adjoining Dispatchers Room, an Executive office and meeting room with information display, and a Media Briefing room, also with information display. The resulting visualization integration translated into enhanced process integration that dramatically improved operating efficiencies and effectiveness in several areas.



As a network-based system, information access, display and sharing are no longer confined to the main operations room. A major operational benefit is that monitoring is now location independent such that TMC functions can be handled in other locations serving redundancy and back-up function.

The new traffic management center is also connected to the CHART system (state-wide freeway traffic management system) with Activu providing one-way information display of the state-wide traffic surveillance cameras, traffic congestion, and incident information. Two-way information sharing with City of Baltimore data being made available to CHART is planned for the near future. This link facilitates improved regional traffic operations coordination throughout the area.

Activu's open architecture and inherent scalability provides added flexibility for expanding the inventory of information sources, such as the number of surveillance cameras. The system currently has access to about 300 state and city cameras. This number will grow to over 400 cameras with additional City cameras planned for future deployment.

Activu Services designed and built a system that provides maximum information display capability. The large scale display wall in the control room is a 3x6 matrix of 50" Mitsubishi DLP cubes where operators dynamically manage wall content using a highly intuitive user interface.

The Main Conference room is equipped with an array of four 42" 1080p NEC flat panel LCDs plus an additional 46"

interactive panel on either side of a high definition overhead projector (and motorized drop down screen). Activu enabled separate streams of information to be displayed on each panel, enhancing situational awareness for key decision-makers assembled in the room. Whiteboarding capability on the two wall panels facilitates strategy sessions and discussion.

The Dispatchers Room, Executive Office meeting and Media Briefing rooms are also outfitted with the same NEC panels, with Activu driving individual information streams to each screen.

As a result of these capabilities, Baltimore's TMC has been transformed into a state-of-the-arts communications hub, centered in the Main Conference Room (combined with the Executive Office used, for example, by the Mayor during times of emergency). This enables the migration of emergency operations activities from a neighboring EOC to this facility, as well as extending information sharing and collaboration with state-level Homeland Security, State Police and the Port Authority in the future.

Activu has provided TMC operators with a dynamic and flexible tool that helps them detect and assist in the handling of incidents in a more efficient manner. By identifying congestion-causing incidents quickly, clearance times are reduced, minimizing the incidence of secondary accidents while improving the safety and satisfaction for drivers.