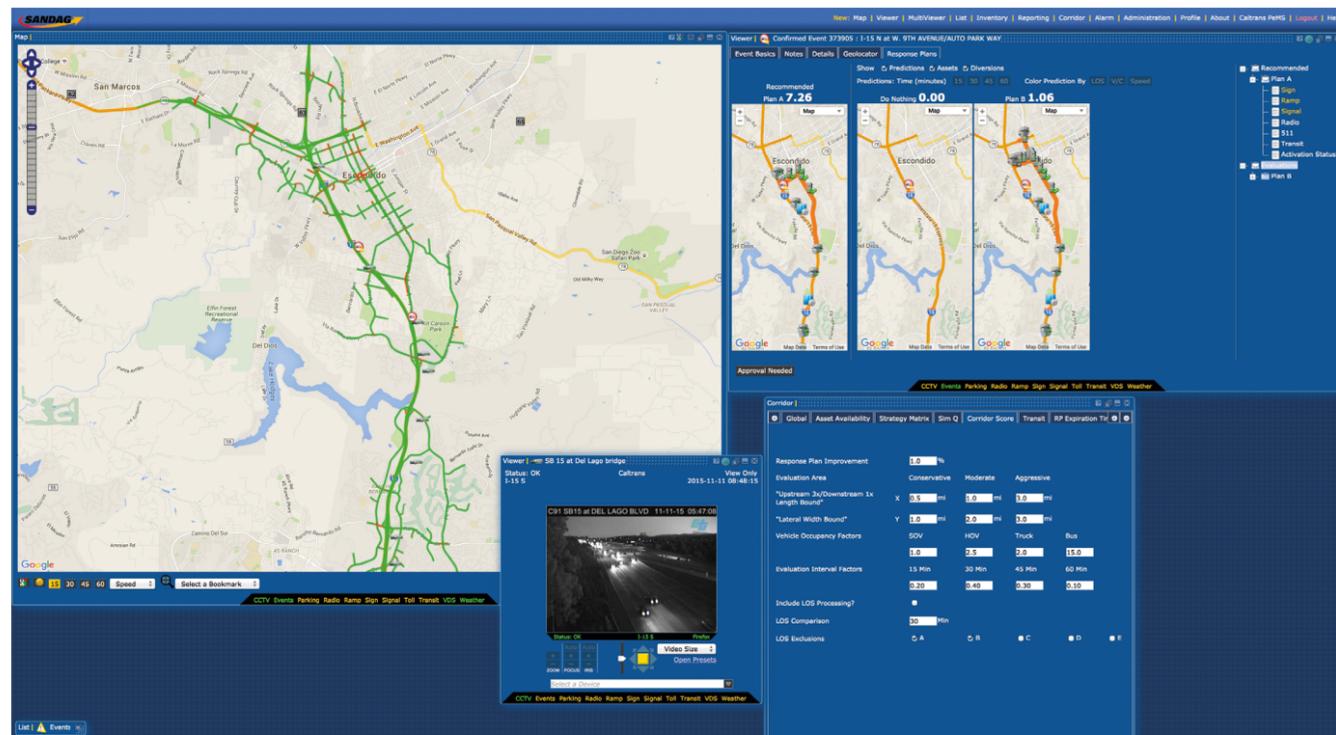


Real-time California

The latest developments in the pioneering San Diego I-15 integrated corridor management system include work on a mesoscopic model of the whole of San Diego County

Words | **Nadia Feddo, TSS – Transport Simulation Systems, USA**



San Diego is at the forefront of advances in ITS and leading the way is the integrated corridor management (ICM) system on Interstate 15. After more than two years of deployment, confidence in the system has grown and Caltrans (California's Department of Transportation) and the cities of San Diego, Poway and Escondido have agreed to take the response plan activation from an agency approval stance to an automated stance, where devices are automatically controlled by the system.

On the strength of the success of the ICM system, the metropolitan planning organization the San Diego Association of

Governments (SANDAG) is in the process of developing an Aimsun dynamic traffic assignment (DTA) model, which uses mesoscopic simulation, to model the whole of San Diego County. This model will incorporate ITS elements such as new ICM corridors, signal improvements, transit signal priority, speed harmonization and dynamic merge control, and will be integrated with SANDAG's regional activity based model, which provides results for the regional transportation plan. This is the first time the benefits provided by ITS-related non-infrastructure based improvements will be part of SANDAG's regional modeling.

(Above) **Aimsun Online user control panel**

A model for the future

"At SANDAG we know that modeling plays a key role in planning and operations, especially for ITS," says SANDAG's technical manager, Peter Thompson. "The San Diego region has been a pioneer in the ITS area. Our ambitions are not limited to current technologies and techniques. We are actively exploring connected vehicle technologies and taking modeling to new areas such as real-time decision support and integration of supply-and-demand analysis."



(Left) **The I-15 uses advanced ITS infrastructure, including dynamic ratio ramp metering, reversible high occupancy vehicle (HOV) lanes and high occupancy tolls (HOT) with dynamic pricing, and systems for disseminating advance information about traffic incidents**

The Federal Highway Administration (FHWA) has also launched a project to develop advanced next-generation analysis, modeling and simulation (AMS) capabilities to evaluate the benefits of the USDOT's advanced travel demand management (ATDM) and dynamic mobility applications

(DMA) connected vehicle programs. The vision is to develop high-fidelity analytical tools and a platform to test new and evolving concepts at high resolution and to mimic real-world operations in a simulation environment. The proliferation of ITS applications, coupled with SANDAG's deep

and pioneering use of modeling for planning and operations, has made the San Diego I-15 model the perfect testbed for both ATDM and DMA.

The ICM network is currently being used to assess the impact of ATDM applications including dynamic lane use, dynamic HOV/managed lanes, dynamic speed limits and dynamic merge control. In coming months additional scenarios will be coded to assess the role that predictions play in ATDM and the sensitivity of the duration of a prediction on the effectiveness of a decision-support system. Furthermore the intelligent network flow optimization (INFLO) and multi-modal intelligent traffic signal systems (MMITSS) will be incorporated into the system to test the potential effects of the implementation of these new DMA approaches. ■



The evolution of intelligent traffic management

Aimsun Online simulates each vehicle inside a lane-based road network faster than real time to evaluate traffic management strategies and predict travel times.

Now operational in San Diego (Interstate 15) and suburban Lyon; soon to be deployed region-wide in two major EU countries.



www.aimsunonline.com