

**Deployment Workshop Project Updates
May 2007**

	#	Project Name	Project Description	DRI Project Manager	Customer Contact	Status Report
KS	1	Transfer Tank Longitudinal Sealer (TTLS)	The TTLS system consists of 2 separate independent machines (seal application truck and sealant supply transfer trailer) that are only connected briefly to transfer sealant. TTLS allows an operator to seal longitudinal cracks within a moving lane closure inside the truck cab without being exposed to highway traffic and hot sealant. Development of the Sealzall Machine is an upgrade to the TTLS.	Arvern Lofton	Nate Cradle, Maintenance	TTLS project is complete. Maintenance also expressed an interest in a crack blower on the front and a wand on the back to cover transverse cracks. The Sealzall prototype has a wand-applicator to fill transverse and longitudinal roadside cracks and has a more efficient kettle. No private vendor has been approached to produce more of these products. AHMCT is building a new prototype in-house for Maintenance. AHMCT was asked about developing a training manual and a training team when deploying the product to the end users. There will be an automated touch screen pad to aid users thru the system. A training team will be organized.
KS	2	Telerobotic Roadway Debris VACuum System (ARDVAC)	The ARDVAC unit is a vacuum truck with an articulating nozzle attached to a boom arm. An operator can maneuver the nozzle to vacuum up debris in difficult to reach places while remaining inside the vehicle cab and not exposed to highway traffic.	Arvern Lofton	Nate Cradle, Maintenance	The Division of Equipment (DOE) assisted in the evaluation of the ARDVAC during Spring of 2003 along Interstate 80 near Mace Blvd. The outcome was that the nozzle needs to have a smoother articulation. DOE recommended that the nozzle not be stored in the front of the vehicle. The new units should have that new modification. Alamo, the new company, may be able to deliver the two promised units by summer of 2007. Patent revocation or a reduced patent license is being considered if units are not delivered. Maintenance has expressed a strong interest in having the units. Funding to purchase units may be sunseting by summer of 2007.
KS	3	Bridge Height Measurement System	A vehicle mounted, measuring device utilizes a laser scanner to provide a 3-D model of a scanned bridge infrastructure while the vehicle is moving. The product allows Structure	Arvern Lofton	Rick Jorgensen, Structures Maintenance	This project is part of the Maintenance & Operations Deputy Director Innovation Agreement with Caltrans Director. The unit will be Field-Operational Testing (FOT) by mid-June '07 by Structures Maintenance. Project is within the allocated budget. There are still issues with laser reflectivity from asphalt on a

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			Maintenance workers to collect minimum vertical and horizontal measurements of bridge infrastructures while remaining inside the vehicle and off the highway.			bright day. Outside vendors are being considered as well as gathering data for the business case. A training manual and a training team is being organized.
JA	4	A Risk Assessment and Cost Analysis for the Mobile Workzone Protection Device (Balsi Beam)	Development of information for use by Division of Maintenance for the placement of the Balsi Beam.	Juan Araya	Nate Cradle, Maintenance	The final report with its recommendations was distributed in February 2007.
KS	5	Construction Analysis for Pavement Rehabilitation Strategies (CA4PRS)	Pavement construction operation analysis, which establishes the least delays and most economical roadway closure scenario.	Michael Samadian	Mary Beth Herritt, Design	Project is in deployment phase and has been deployed on several projects in California. A draft FSR was completed and handed over to IT. IT then assigned a consultant to revise it for the final draft. FHWA, AASHTO, about 8 state DOT's, consultant experts, and academia met in March for a construction work-zone traffic modeling workshop. Results of the workshop were positive and shed light of most DOTs internal issues. FHWA is in the process of arranging free group license for other state DOTs and locals.
AB	6	Inductive Signature Technology (IST) Loop Detector Card	To improve the quality of loop detector data collected by the TMC. There are many causes of bad data. Some are caused by deteriorated installations such as a broken loop which requires construction to fix; some are due to crosstalk, low Q, low Meg, etc. It's possible that a number of these problems can be solved by replacing existing 222-type detector cards with the IST cards.	Joe Palen	Vic Barbaric, D4	An evaluation has shown that IST cards appear to resolve about a third of the loop detector problems that are due to the loops, although this was a small percentage of the overall loop system problems. Hence, IST has implemented their own data collection and communication system. IST has a number of fully functional loop stations working continuously online in San Diego which produce accurate classification data as well as speed, volume, and occupancy.
HI	7	Efficient	Low cost ITS for small transit	Bruce	Gail Ogawa, Mass	EDAPTS Cost/Benefit Evaluation and

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		Development of Advanced Public Transportation Systems (EDAPTS) Smart Transit System	agencies. Uses performance for cost trade-off and capitalizes on unused infrastructure.	Chapman	Transportation	Development of Performance-Based Specification tasks are scheduled to complete in October 2007. EDAPTS Stage 5 Deployment Support / 1 is about to start by CCIT.
AB	8	ITS Decision, Gateway to Understanding and Applying ITS.	<p>This project is three-fold:</p> <ol style="list-style-type: none"> 1. Provide up-to-date overview and evaluation of the deployment of ITS products and services at local, state, national, and international locations where they have been deployed. Through ITS Decision Website, users will learn about costs and benefits, risks and roadblocks, and deployment lessons learned. 2. Provide ITS decision making tool box of an Expert System (ES) tool, Case-based Reasoning (CBR) tool, and Cal-ITS-BC Model as one integrated planning suite of models for Caltrans (and its partners) planners and engineers. 3. Give guidance on ITS Architecture and Architecture conformity for those 27 ITS technologies. 	Mohamed AlKadri	Reza Navai, Planning	<p>Tested the web-interface for Expert System (ES) module for Ramp metering. The interface is now available at http://calccit.org:9006/expertsystem/pop-up.html.</p> <p>Updated summary and full reports for congestion pricing, electronic toll collection, and car-sharing (to be posted online). Finished the literature search on Freeway Service Patrols (FSP) and started the expert system design for FSP. Added new records to the searchable database. Receive and responded to email inquiries about various ITS technologies implementation.</p> <p>Tasks for next quarter are to update out-of-date reports for ITS technologies, finish the expert system development of freeway service patrol, re-organize the structure of ITS technologies reports in the ITS Decision website, add new records to the searchable database, present progress and demonstrate ITSD to DoTP and DRI in Sacramento, and draft proposal for a new 18-month phase of ITS Decision.</p>
HI	9	Development of Business Cases for Deployment of AHMCT Projects	This project develops business cases to support the deployment of advanced technologies into the Caltrans work place. Specifically, the business cases will be developed for machines	Bob Meline	<p>TTLS: Courtney Morrison, Maintenance</p> <p>ArdVAC: Sheree Edwards Nate Cradle,</p>	Business cases for the TTLS and ARDVAC have been delivered and presented. The Automated Cone Machine Business case is under development

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			originating from the AHMCT Research Center and from Caltrans. Business case analysis can facilitate the deployment of new technology. This project aims to develop approximately four per year starting with the most promising projects at the highest stages of deployment.		Maintenance	
AB	10	WeatherShare, Phase II	WeatherShare is a web site that provides relevant road weather information that is easily accessible by incident responders and the traveling public. WeatherShare streamlines and integrates road weather data from various sources such as RWIS, CDEC, and MADIS into one single source. . Phase 2 of the project will prepare the system for full deployment.	Mandy Chu	Ian Turnbull, D-2 Operations	Will continue the process of integrating data for statewide coverage, and we hope to acquire data from California Data Exchange Center (CDEC). We will also incorporate quality control into the import process. Beyond the rough maps we have created, we will work on a new version of the user interface to display this information. Subsequently, we will work on alert and additional display functionality. Once this new data is brought online with a usable interface, we will work to bring new users online with the system for pilot testing. A presentation of the WeatherShare system will be given at ITS America's summer meeting in Palm Spring in June as part of on-going outreach to prospective users.
AB	11	Responder Study Phase II	The Responder System uses a Tablet PC for collecting, tracking and sharing incident information between at-scene responders, the Redding Traffic Operations Center (TOC) and secondary incident responders, facilitating management of the incident scene and	Mandy Chu	Jeff Kiser, D-2 Maintenance	A pilot system for Caltrans District 2 was completed and delivered in February. The initial system that was delivered to Caltrans last summer has been used in Stockton (District 10), District 3 and now in District 4. Activities in the next quarter are largely centered around preparing for ITS America 2007 in Palm Springs as part of the outreach and demonstration. . The project will be presented at both a regular session and a poster session.

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			improving the effectiveness of response activities. Phase 2 of the project will prepare the system for full corporate deployment.			Furthermore, the Responder project has been nominated for a 2007 "Best of ITS" award. It is one of three finalists for this award. Will continue to solicit feedback from end users and use that feedback to improve the system.
HI	12	Adaptive Transit Signal Priority (ATSP)	An ATSP that reduces bus travel time through traffic signals while limiting the impact on the rest of traffic and maintaining pedestrian safety.	Z. Sonja Sun	Gail Ogawa, Mass Transportation	Preparation for testing of single priority request along multiple intersections is completed. The modification of Caltrans Traffic Responsive Field Master (TRFM) software to fit in to Linux operating system is in progress.
HI	13	Smart Parking	Smart Parking uses advanced technology to provide real-time transit parking information to direct highway drivers to available parking spaces at a transit station. It also enables drivers to make advance reservations for parking at transit stations thus reducing the frustration of trying to find an available space.	Jeffrey Spencer	Gail Ogawa, Mass Transportation	"Seamless Door-to-Door Travel", Smart Parking Pilot Project with BART/SANDAG is currently in progress. Conducted meetings with SANDAG and Smart Parking Vendor representatives.
AB	14	Google Earth ITS Field Elements Project	Using rudimentary software scripting tools, this project maps California ITS data spatially on Google Earth and updates this data every three minutes.	Sean Campbell		Currently, only CMS data from Districts 1, 3, 4, 5, 6, 8, 9 and 12 are being mapped. Districts 2 and 10 are coming soon. Still looking for the data sets for Districts 7 and 11. The data link for use in the Google Earth browser is located at : http://www.dot.ca.gov/research/its/kml/CM S.kml Next quarter, Districts 2 and 10 CMS data will be added, as well as starting the CCTV data sets for each location.
KS	15	Shakecast	ShakeCast, a post-earthquake	Loren Turner	Maintenance &	The United States Geological Survey (USGS) is

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			<p>response system that will automate the analysis of real-time earthquake ground shaking data against Caltrans bridge design data to deliver bridge inspection priority lists by pager and e-mail to key response personnel. Having this information within minutes following an earthquake will improve the Department's emergency response by more effectively focusing inspection resources in the critical hour after an event.</p>		Operations	<p>completing the non-Caltrans specific work, which had resulted in the 3-month delay to Caltrans deliverables. Work has been initiated on the map interface to ShakeCast.</p>
AB	16	Vehicle Infrastructure Integration (VII)	<p>VII is a public-private challenge to investigate the feasibility of a nationwide deployment of vehicle-to-vehicle and vehicle-to-infrastructure Dedicated Short Range Communications (DSRC) based communication with the primary goal of enhancing road safety and improving mobility and convenience.</p>	Hassan Aboukhadijeh	DRI	<p>We successfully implemented the "World Congress Demonstration (Phase I) as part of the Innovative Mobility Showcase (IMS). The focus now is on the full deployment of Phase II. Currently, we are planning to integrate on-board sensors, digital map, GPS and the broadcasted information from the roadside unit (RSU) to predict safety speed and provide speed advisory or warning messages to the driver. Recently, Toyota InfoTechnology and BMW have joined the program partnership. Caltrans and Metropolitan Transportation Commission (MTC) are now seeking to expand the program through partnership with additional Original Equipment Manufacturers (OEMs), other public and private entities, and new application and services.</p>
HI	17	Travel Time on CMS-Control Software	<p>This project will deploy and expand the Travel Time on CMS system throughout Caltrans District 4 and District 3. The primary</p>	Asfand Siddiqui	David Lively	<p>Implementation of Changeable Message Sign (CMS) in District 3 and District 4 has been completed. In District 10 the implementation of CMS is in progress.</p>

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			objective is to deploy a system that Caltrans' Transportation Management Centers (TMC) can use to configure, manage, and display travel times on CMS.			