Trans-Sierra Rural VII
Along California State Route 88

NRITS 2008 Anchorage, Alaska

Clint Gregory
California Department of Transportation
District 10

Trans-Sierra Rural VII
Along California State Route 88

Where in the world

California VII

Rural State Highway 88

Avalanche Program

Project Hardware
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From the Districts to the Counties
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San Francisco Bay Area

Sacramento

Lake Tahoe

Yosemite National Park

CMS
Changeable Message Signs (CMS)

HAR
Highway Advisory Radio (HAR)

Roadside Units (RSU) under evaluation, locations to be determined
Existing System

Traffic Data and Functionality
1) Traffic Bin Data - volume, speed, occupancy, length class (=20ft, 20-40ft, 40-60ft, 60ft), 15 Minute bins.
   (1 day stored data)
2) 30 Seconds - Speed, Volume, Occupancy Report - (Live)
3) Telnet Session - Configuration menu, display vehicles (Real-Time).

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Traffic Center Server

ITSMiddleware

TrafficData

TCP/IP

FrameRelay

Wireless(DPRSS, EDGE)Network

CustomAPN

CommandControlTCP/IP

OracleDatabase

JDBC

DetectorApplication

Using 1 Minute SpeedVolRecord
* Speed Standard algorithm
* Speed Resume algorithm
* Notify Live Traffic Map
* Notify DNS as needed
* Alarms and more...

Using Traffic Bin Data
* Create files for Caltrans Traffic Center.
What to Share with Public

**ILDA**
Intelligent Loop Detector Application
30 second data on traffic flow

**RWIS**
Regional Weather Information

**Highway Patrol**
Amber Alerts, Road Closures
and Incidents
California VII
Test Bed

Southern Peninsula,
San Francisco
Bay Area
Mobile Millennium: mobility tracking using cellular phones

UC Berkeley – CCIT – Nokia – Navteq
Rural Highway 88

33 miles of road above 7000 ft.
5 mi. above 8000 ft.
Average Seasonal Snowfall = 30 ft.
Average Monthly Snowfall
Highway 88
Caples Lake Maint. Station
Kirkwood
Elevation 8000 ft.
Kirkwood and Caples Lake sit between 2 active avalanche areas 5 miles apart.
Carson Spur

Highway 88 - Carson Spur
Chute 1 - Red Lake
Comice Formation
Cornice Prevention

A

B

C
Hand charges

- 2 pound charge hand placed in areas not controlled by the Gazex system.
Snow Accumulation

[Images of snow-covered areas with machinery]
Group Enabled Mobility and Safety (GEMS) Concept

- Provides real-time traveler information
- Services can be downloaded from the web
- Gateway uses multiple communications modes
- Independent of vehicle type
- Uses the VII California Test Beds
Multi-Network

(All solid lines already working)
Multi-Network Gateway

- Gateway has Wi-Fi and DSRC radio interfaces
- Also has interface to Wizard 2 and Bluetooth interface to cell phones
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Typically Wizard’s run ILDA and Traffic applications

This time the Java Chipset handles VII modules for interface between the Vehicle and Gateway
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Vehicle Inputs can be wired directly to the 24 channels or to the Analog to Digital Port.

8 channels are provided for Outputs to Driver.
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Contact Info:

Clint Gregory
Dept. of Transportation
California

cgregory@dot.ca.gov
District 10

Q & A

Caltrans Improves Mobility Across California