

State of California
Office of the Chief Information Officer
Public Safety Communications Division
911 Emergency Communications Office

REQUEST FOR INFORMATION

FOR

E9-1-1 "NEXT GENERATION" NETWORK SERVICES

REQUEST FOR INFORMATION

Requestor: The California 9-1-1 Emergency Communications Office (9-1-1 Office), Public Safety Communications Division, Office of the Chief Information Officer (OCIO).

Purpose: To obtain high level cost data for the design and implementation of an IP-enabled Next Generation 9-1-1 Network to meet the needs of E9-1-1 wireless call routing, provide "virtual" public safety answering point (PSAP) functionality, and to eliminate mileage-sensitive network components.

Background:

Today, wireless call routing is based on cell sector coverage area. Because cell sector coverage areas can cover more than one jurisdiction, a caller may not be routed to the correct PSAP when the call is first made, and may need to be transferred to the correct PSAP adding time to the call. By statute, wireless 9-1-1 calls that originate within California are answered by the California Highway Patrol (CHP), unless delegation is given to other PSAPs to answer wireless 9-1-1 calls directly.

Up to this point, the CHP has maintained wireless 9-1-1 answering authority whenever any part of the sector coverage area of a cellular telephone tower overlaps any part of the CHP's jurisdiction. Because of this, and the astronomical growth in wireless 9-1-1 call volume in recent years, CHP PSAP centers have become inundated with calls beyond what the CHP call-takers can reasonably handle.

It is the 9-1-1 Office's belief, as well as the CHP's, that routing wireless calls to the appropriate PSAP at the origination of the call, would greatly improve wireless 9-1-1 call processing, as well as help to alleviate the excessive call volume experienced by the CHP today. This would mean that the exact location of the caller would need to be

determined and used to route the call to the appropriate PSAP at the call's origination, rather than using a cell sector coverage area to route the call.

Requested Solution:

The 9-1-1 Office's objective is to route wireless 9-1-1 emergency calls as quickly and efficiently as possible to the correct PSAP the first time, by eliminating as many call transfers and abandoned calls as possible. As envisioned, the new system would identify the location of the wireless 9-1-1 caller based on geographic coordinates of latitude and longitude (commonly referred to as "X-Y" routing). The call would then be immediately routed directly to the appropriate PSAP agency that has jurisdiction for the origination location of the wireless handset at the time the call is made. Location of the calling party (expressed as X-Y coordinates, as well as by street address) would accompany the call at the time of call delivery to the PSAP. Additionally, in cases where the wireless handset changes location during any specific 9-1-1 call, continuously updated X-Y location information would be delivered to the PSAP call taker in "real time" as the handset moves, without any "re-bids" by the 9-1-1 call taker.

The solution envisioned at a high level, would be a separate and unique IP-enabled network that would interface with the wireless service provider's (WSP) mobile switching center (MSC). This new network will interface to, and work in parallel with, the existing landline legacy network.

The wireless 9-1-1 call would be routed from the MSC to the proposed network, and to a network element(s) within the new network, which will provide call processing capability for call routing and call treatment for each wireless 9-1-1 call.

The new network element(s) would have the capability to hold the 9-1-1 call for a specified programmable time period, provide call treatment (busy, recording, etc. to be selected by the State), and retrieve latitude and longitude from the WSP for the caller. The new network element(s) would then access routing information that identifies jurisdictional boundaries, and when the jurisdiction is identified and confirmed, routes the call based on the received latitude and longitude.

The new network element(s) will send the call on the proposed IP-enabled network to the appropriate PSAP. The solution must identify and include any network element or gateway that may be necessary to terminate the call to a PSAP that may or may not be IP-capable.

The new network element(s) must also have the capability to receive wireless call transfers from the PSAP, and to route the call to another PSAP on the new network, or to hand off the transfer to the legacy network.

As part of the new network solution, the 9-1-1 Office is looking for a solution that provides a PSAP the ability to abandon their traditional fixed geographic location and resume their normal business functions at another location, based on a user log-on. That is, a network solution that would allow a PSAP calltaker to log-in to the network from anywhere, and allow them to resume all their normal 9-1-1 dispatch functions, e.g., the ability to answer 9-1-1 calls with access to all additional 9-1-1 information used for dispatching.

In addition, the solution will allow a group of PSAPs to overflow calls (based on specific criteria identified by the PSAPs) to one another and will allow PSAPs to work together as a “virtual” PSAP.

Because of its large geographic footprint, California has very densely populated areas, as well as very remote and sparsely populated areas. In either case, it is the responsibility of the 9-1-1 Office to provide equivalent 9-1-1 services, in all cases, no matter where a citizen may reside. This has, in some areas, dramatically increased the cost to provide 9-1-1 service. In the current California E9-1-1 Network Tariffs, trunking products incorporate mileage-sensitive elements that make it very costly to bring 9-1-1 service to PSAPs that are not closely located to the Selective Router switches. The 9-1-1 Office is looking for a proposed next-generation network solution to help eliminate the need for the traditional 9-1-1 PSAP trunks, and the mileage-sensitive billing elements associated with those trunks.

RFI Response Requirements:

Please provide a complete description of the proposed solution along with all associated costs and how it addresses the wireless call routing, “virtual” PSAP, and network cost issues outlined in this document.

The 9-1-1 Office has decided that this project will be built in phases beginning in Northern California. The project has a projected start date of 1/1/2010 with a completion date of 9/1/2012.

Please provide a cost breakdown for your solution for each phase, with a cost total for all phases based on the information provided below.

Phase 1

<u>PSAP Name</u>	<u># of Positions</u>	<u># of Trunks</u>
Butte County Sheriff	3	8
Oroville Police Dept	3	4
CDF Oroville	3	6

Gridley Police Dept	1	2
Chico Police Dept	6	6
Paradise Police Dept	3	4
CHP Chico Dispatch	3	12

Phase 2 PSAPs

<u>PSAP Name</u>	<u># of Positions</u>	<u># of Trunks</u>
Yuba County Sheriff	3	7
Yuba City Police Dept	4	4
Marysville Police Dept	2	3
Colusa County Sheriff	2	6
Sutter County Sheriff	2	7
Beale AFB	1	2
Glenn County Sheriff	2	3
Willows Fire Dept	1	1
Tehama County Sheriff	3	7
Corning Police Dept.	2	2
Corning Fire	2	2
Red Bluff Police Dept.	3	4
CALFIRE Red Bluff	2	4

Phase 3 PSAPs

<u>PSAP Name</u>	<u># of Positions</u>	<u># of Trunks</u>
Plumas County Sheriff	3	5
Modoc County Sheriff	1	3
Susanville Police Dept.	4	4
CHP Susanville Dispatch	3	6
Susanville Interagency Fire	4	4

Phase 4 PSAPs

<u>PSAP Name</u>	<u># of Positions</u>	<u># of Trunks</u>
Siskiyou County Sheriff	4	6
Yreka Police Dept.	1	2
Weed Police Dept.	1	2
Mount Shasta Police Dept.	1	2

CHP Yreka Dispatch	3	4
CALFIRE Yreka	2	6
Shascom Regional Dispatch	9	10
CALFIRE Redding	4	6
CHP Redding Dispatch	3	6

Phase 5 PSAPs

<u>PSAP Name</u>	<u># of Positions</u>	<u># of Trunks</u>
Sierra County Sheriff	1	5
Trinity County Sheriff	2	5
	89	162

RFI Response Date :

Please E-mail your response to andy.nielsen@state.ca.gov with "California RFI Response" in the subject line by 5 p.m. July 20, 2009.

Questions

Respondents will E-mail any questions to andy.nielsen@state.ca.gov by July 13, 2009. The 9-1-1 Office will consolidate questions and provide answers on or before July 15, 2009.

Confidentiality

All respondents' contact information will be held in confidentiality and controlled by the 9-1-1 Office, unless specifically given authorization to release it to others by the individual respondent.