

Multi-Agency Interoperability at South Bay Regional Public Communications Authority



The Challenge to Regional Emergency Response

South Bay Regional Public Communications Authority (SBRPCA), hosted by the City of Hawthorne, provides dispatching services to multiple police and fire departments in Southern California, including El Segundo, Hermosa Beach, Gardena, Manhattan Beach. SBRPCA faces a tough challenge in daily operations as joint dispatching of multiple agencies always requires well-coordinated efforts among participants to support regional inter-operations at all times. Even a routine call's dynamic may change and require immediate responses from multiple agencies.



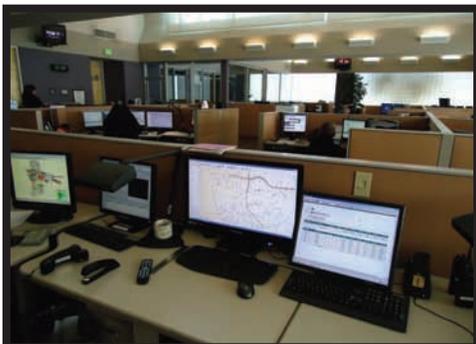
Requirements for Watch Commanders and Dispatchers

To manage multi-agency dispatching effectively, watch commanders and dispatchers must utilize the latest technology in wireless communications, GPS, and mobile mapping to maintain the highest level of situational awareness. A reliable common operating picture is the key to effective response to any change in operations. Watch commanders and dispatchers must be able to see from their computer screens all the current incidents in the region, the available resources in the city, as well as available units from neighboring cities. A dispatcher must be able to quickly and accurately locate available units closest to each incident. To SBRPCA, the challenge is much more complicated as the dispatcher assigned to one agency requires the capability of identifying the closest available units from neighboring agencies whenever the need for mutual aid arises.

Requirements for Field Officers



The mobile mapping technology must assist officers on the street to access the same common operating picture in real time. Field officers must obtain the critical information about each incident on their in-vehicle Mobile Data Computers (MDC). The officer needs to see the locations of the assigned incident and nearby sister units on the map. In a typical operation within the city, police officers know their neighborhood well enough that they may not need the assistance from a map to find an address. At SBRPCA, this is not the case in multi-agency inter-operations as field officers may not be familiar with the buildings and streets of other cities. In such situations, the latest technology could be most helpful for the officer to know the situation quickly and accurately: Where is the location of the incident that I am assigned to? How can I get there as quickly as possible? Can I get voice guidance of turn-by-turn directions from my MDC when I am in an unfamiliar neighborhood? Will there be units from neighboring agencies to take part in this operation? Will I be able to see the incident and resources from my agency and neighboring agencies on the MDC during a regional operation tens of miles away from my own city? The capability to answer these questions quickly is important to the safety of field officers and the efficiency of multi-agency operations. However, providing answers to these questions in a regional setting is not as simple as people may have realized. For instance, most cities have local GIS data with citywide coverage, yet a citywide GIS database is never sufficient to support regional inter-operations.



"In an era of shrinking budgets and increased challenges providing police services to our communities, the need to partner and work closely with surrounding cities is more important now than ever before." quotes Captain Michael Ishii, Hawthorne Police Department, California. "As each department participates in regional taskforces and support one another during major incidents, the ability to view, coordinate, and manage multiple units from different jurisdictions on one map becomes a valuable resource for the Incident Commander of a major operation while enhancing officer safety."



The GST/Sprint Solution

The advanced mobile technology requires a network with effective high-speed wireless communications. The capability to see all the units of my agency and other agencies is a useful feature for workstations through a local area network. In a mobile environment, however, one cannot expect unlimited bandwidth in the wireless network and let every unit constantly receive the entire set of AVL data of all other units in the region. With bandwidth constraints, AVL data must be filtered geographically and dynamically in order to efficiently deliver only the necessary set of surrounding units' information to each unit. The latest mobile technology enables AVL data delivered to one unit to be different from the data delivered to another unit based on each unit's location. The challenge is to automatically present to each officer the available units of his/her agency and nearby units from other supporting agencies while his/her vehicle constantly moves.

SBRPCA contracted GeoSpatial Technologies, Inc. (GST), and Sprint to implement a system built on the cutting edge technologies in wireless communications, real-time tracking and mobile mapping to answer the challenges of complex situations. Wireless data communications between MDC's and the dispatch center are provided by Sprint's Datalink network. Ever since the successful deployment of the system, wireless communications have been proven to be reliable and effective. The system incorporates a live interface between GST and Tiburon® CAD allowing MDC's to receive critical incident information properly. Whenever a call is received, the officer is able to see the incident, the GPS position of the vehicle, and the fastest route from the vehicle to that incident on the map. If needed, the officer may click on the audible turn-by-turn guidance and navigate to the incident. The officer can always see the whereabouts of sister units of the city, and also nearby units from neighboring agencies. In case the officer is in an area beyond the jurisdiction, he/she may click a button to switch from the local GIS map to Microsoft® MapPoint national map. In addition to providing additional protection for officer's safety, this system has proven to offer dispatchers, watch commanders, supervisors, and field officers the most-needed situational awareness in regional, multi-agency inter-operations.



GEOSPATIAL TECHNOLOGIES, INC. 10055 Slater Ave., Ste. 214 Fountain Valley, CA 92708 T. 714. 861. 7033 F. 714. 861. 7032 info@geospatialtech.com

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