

**TESTIMONY OF MICHAEL AMAROSA
SENIOR VICE PRESIDENT, TRUEPOSITION, INC**

**Before the
SUBCOMMITTEE ON COMMUNICATIONS
COMMITTEE ON COMMERCE, SCIENCE AND TRANSPORTATION
UNITED STATES SENATE**

E 911

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Good morning Mr. Chairman and Members of the Subcommittee. My name is Michael Amarosa and I am Senior Vice President of TruePosition, Inc. It is a privilege to appear today as part of the Subcommittee's continuing review of the implementation of E 911 Emergency Calling Systems. Enhanced 911 or E 911 is the technology that locates individuals calling for help from a wireless phones. The availability of the technology to the public can save lives, protect property, and contribute to a more secure America. In fact, wireless location capability is an integral element of homeland security and is a critical instrument of providing the Nation's first responders with more precise information.

TruePosition commends Chairman Burns, Senator Inouye, and other members of the Commerce, Science and Transportation Committee, for their enduring leadership on this important public safety issue. Much progress can be traced to your conviction that E 911 can bring faster emergency response to all areas of the country, rural, urban and suburban, and your efforts toward making E 911 a reality. The recently established 911 Caucus, which Chairman Burns and Senator Clinton chair in the Senate, and

Congressman Shimkus and Congresswoman Eshoo chair in the House, is a further source of support to this critical effort.

Expeditious and effective emergency response has been at the center of my professional career. I spent 24 years working in public safety. It was my honor to manage the largest 911 center in the Nation, that of the New York City Police Department, as Deputy Commissioner for Technological and Systems Development. The NYPD sought to bring to public safety technologies that would speed police, firefighter and emergency medical service response to the citizen needing help. I represented the NYPD on the Public Safety Wireless Advisory Committee (PSWAC), which the Federal Communications Commission (FCC) established to address public safety spectrum requirements. During my tenure at the NYPD, we undertook and completed a major upgrade of the systems supporting 911. This effort encompassed obtaining the necessary funding, determining and designing the system upgrades, and implementing the upgrades. This experience reflects a microcosm of the ongoing national effort to deploy wireless E 911. Since leaving the NYPD, my role with TruePosition has given me the opportunity to work with the range of 911 communications centers, large and small, urban, rural and suburban. In many respects, the challenges the 911 system faces today parallel past efforts to bring modern technology to emergency response.

Modern technology is crucial to emergency response. I was working as the Director of Communications with the NYPD in 1993 at the time of the first bombing of the World Trade Center, just blocks from police headquarters. I remember clearly the circumstances we encountered at the twin towers that day and how it served as a motivating force behind the department's initiative that it have available the latest

communications technology. Redundancy and interoperability became the by-words that remain the foundation of emergency communications today.

TruePosition's very existence evolves from wireless location technology. We have made a substantial investment to develop and provide commercially available location technologies that comply fully with requirements established by the FCC. TruePosition's research, development, testing and implementation have made E 911 a reality. We continue to work with the public safety community and with carriers, both large and small, to bring about pervasive E 911. After the September 11, 2001 attack, TruePosition employed its technology at Ground Zero with the Wireless Emergency Response Team (WERT) to locate cellular signals at the World Trade Center rubble. We were able to locate approximately 1,600 signals. We provided the information to FEMA officials to check it against those individuals who could possibly be in the area.

TruePosition is now providing location technology to wireless carriers in 12 cities. TruePosition is particularly proud of its relationship with Cingular Wireless LLC as it represents the most definitive and extensive rollout of E 911 to date. The deployment of TruePosition technology on 2500 of Cingular's cell sites prior to the end of last year met the schedule agreed upon by Cingular and the FCC. Today, Cingular continues to use our technology to fulfill new requests from 911 communications centers (referred to as public safety answering points "PSAPs") for location information that meets the FCC's accuracy rules ("Phase II" information). To date, we have deployed more than 4600 units on Cingular's cell sites. By deploying TruePosition's network-based location technology, Cingular has ensured that its subscribers, along with anyone roaming on its network, do not have to purchase new GPS-equipped handsets in order to

be located when making 911 calls on Cingular's system. The action by Cingular and TruePosition is a distinct and tangible demonstration that E 911 is a reality.

TRUEPOSITION, INC.

TruePosition's systems work in almost any environment be it indoor, outdoor, urban or suburban. The TruePosition system provides nearly 100% yield and is not affected by obstructions such as tall buildings or concrete walls. This capability is critical for emergency responders, who depend upon accurate and precise information regarding the location of the individual needing help.

When a person calls 911 from a traditional wireline phone, public safety agencies typically can automatically determine the individual's location; if the same person calls from a wireless phone, a public safety agency, historically and most often today, must rely on the caller to provide an accurate location...that often heard question is asked by emergency communications personnel, "where is your emergency?" As almost 55 million wireless calls to 911 are made annually from wireless phones, the continued rollout of E 911 is critical.

TruePosition's technology is network-based; there is no modification necessary to consumer handsets; nor will consumers need to purchase new GPS-equipped handsets as is required by other E 911 solutions. This means that TruePosition's system can locate any mobile phone, new as well as old, on the Cingular system. All existing phone sets can be located on the TruePosition system within the requirements set by the FCC, as soon as the wireless carrier completes deployment. There is no need to wait years as consumers slowly replace their handsets. Our technology encompasses the four major air interfaces: automatic message processing system (AMPS), code-division multiple access

(CDMA), time-division multiple access (TDMA) and Global System for Mobile communications (GSM).

The TruePosition system determines a wireless phone's geographical location by collecting and processing the RF signals transmitted by the phone. When a signal is transmitted -- when a phone call is placed -- the system gathers information about the signal from nearby mobile base stations. The data are transmitted to a processor that analyzes the information and computes the position of the caller by using TruePosition's patented Time Difference of Arrival (TDOA) and Angle of Arrival (AOA) algorithms. For a 911 call, the TruePosition system then determines the location of the call and delivers the information so that the appropriate PSAP can dispatch assistance to the caller.

THE FEDERAL COMMUNICATIONS COMMISSION E 911 MANDATE

Wireless telephone carriers are required to provide Automatic Location Identification (ALI). Under the FCC's rules there are separate accuracy requirements and deployment schedules for network-based and handset-based technologies. The FCC has also developed different timetables depending on carrier size. As a result of FCC enforcement actions, several of the largest carriers have committed to specific deployment schedules.

The FCC's efforts have been ongoing since 1994. The principal requirements have been in place since 1996. The FCC's policies and enforcement actions demonstrate substantial judgment and commitment, and encompass expertise in engineering, economics and law. It has comprehended the investment that must be made and the evolving technology. It has resolved difficult issues and struck a careful balance between

the critical need for location information by the American public, while affording carriers and providers adequate time to come into compliance. Through its action, the FCC has made clear how critical E 911 is; it can be the difference as to whether assistance can arrive in time.

THE 911 INFRASTRUCTURE

The initial discovery, development, and evaluation phase for wireless E 911 technology is largely complete. Technology unquestionably capable of providing the level of accuracy mandated by the FCC is available. Installation is largely accomplished in several major markets. For progress to continue, it is important that the FCC's principal regulations be maintained with respect to implementation timing and location accuracy as that technology is available for deployment. The progress that has been made, and that which will follow, can be attributed to delineating clearly the responsibilities of each of the interests that needs to cooperate to implement E 911. The respective obligations of carriers, local exchange carriers and public safety agencies must continue to be unmistakable.

In the context of the 911 communications centers, wireless E 911 deployment is a systems problem, resulting in part from the reality that different components of the system are independently controlled. In my experience the key to successful deployment in this situation lies in speeding up the lagging factors rather than slowing the leading factors. As a practical matter, this means assuring investment in the PSAP infrastructure, and delineating the responsibilities of private interests (*i.e.* the carriers) carefully. The obligations of the wireless carriers, the local exchange carriers, and the other entities that contribute to E 911 effectiveness must be spelled out and they must be stable. Constant

changes to E 911 deployment deadlines and accuracy requirements must be recognized as counterproductive.

There is some reason for optimism. The recent progress in E 911 deployment carries a very important implication for how soon E 911 becomes universally available. The deployment of E 911 systems that has begun in some few markets will produce vast and increasing amounts of relevant information as an inevitable by-product. That information is likely to prove invaluable to all of the wireless E 911 stakeholders -- consumers, public safety agencies, PSAP service providers, wireless carriers, technology companies, and regulators. TruePosition believes that it will affect public demand for wireless E 911 service; demonstrate best practices with respect to design, deployment, and operation of wireless E 911 equipment and service; and provide benchmarks against which to judge progress and performance.

Again, my experience in public safety counsels that once there is tangible evidence of a service, and how it can speed emergency response, the public comprehends the importance and advocates its priority. Once embraced by a community's political leadership, the financial challenges to finding the public investment necessary to enhance the emergency response infrastructure moves toward resolution.

FUNDING THE 911 INFRASTRUCTURE

Public investment in ensuring that 911 communications centers are able to receive and use E 911 and other information is a critical part of improving homeland security and should be considered a National priority deserving of financial assistance. The individuals who staff the local 911 centers are the first responders a citizen contacts when facing an emergency. Confronting the challenge of improving homeland security by

improving the efficiency of the Nation's 911 centers will provide tangible improvement toward getting the right emergency help to an incident sooner.

The current PSAP infrastructure, the communications centers that receive 911 calls, face the challenge of integrating the varying technologies that bring about automatic number information and automatic location information that are the fundamentals of E 911. Without increased investment, the current PSAP infrastructure will be constrained in its ability to bring E 911 to all Americans. Investment must be directed to upgrading internal PSAP infrastructure so that the location information and other caller information now being provided by wireless carriers can be transmitted efficiently and effectively to the 911 communications center. Fostering investment in the PSAP infrastructure is a critical element in bringing E 911 to the public. It will enhance the quality of emergency response.

The funding issue encompasses at least two elements. The first is providing adequate funding that allows each community to make the necessary upgrades to receive E 911 information. The second is to analyze present funding mechanisms to determine whether monies are appropriately directed.

We begin with one advantage. The formal institutional structures are in place. There is no need to create a new significant governmental apparatus to provide what is needed. State and local governments have built and managed 911 communication centers effectively. The centers are an important part of providing core public safety services to their communities. In a very real way, 911 communications centers are instrumental in providing the most basic government service and their performance is a measure of how well government is responding to its citizens.

Funding assistance should be predicated on the specific objective of modernizing customer premises equipment of the 911 centers, including design and modification so that the 911 communication center infrastructure is capable of effective and efficient receipt of automatic number, automatic location, and other information via wireline, wireless and emerging technology forms of communication. Funding should also be available to train personnel to operate the upgraded systems.

In this latter regard, the ongoing educational efforts of the Association of Public Safety Communications Officials, International (APCO) have significantly aided both small and large PSAPs in understanding the FCC's rules and what must be undertaken to meet the formal requirements for making a valid request to a carrier for wireless location information. These efforts should continue and will assist in ensuring that funds are properly directed to meet the goal of a nationwide E 911 capability.

In an important related issue, present funding structures for 911 communications centers remain a very serious problem. There are numerous circumstances where the monies assessed against wireless phone use, ostensibly for purposes of E 911 and other emergency communications service cost recovery, are much too often diverted to fund other programs or cover state and local government fiscal shortfalls. Any financial assistance should address and correct this problem. To be clear, TruePosition believes that this will ultimately be corrected. As wireless location is implemented, it will produce material improvements in safety of life and property. As dramatic episodes of the technology's effectiveness come to light, it should create a public demand for installation in every community, making the diversion of funds less likely. In the meantime, however, it is a practice that should be actively discouraged.

SUMMARY

TruePosition continues to work closely with large and small public safety agencies and the dedicated associations and individuals that represent them, to best integrate our system into the 911 communications centers that receive emergency calls. We have also worked closely with wireless carriers in their significant cooperative effort toward the goal of E 911 deployment. We think that an emphasis on those circumstances where challenges remains, such as the need for investment to upgrade the nation's 911 communication centers, while maintaining the principal E 911 schedules and accuracy standards, is the most direct and timely path to pervasive wireless E 911.

We commend the Subcommittee's leadership in bringing forth nationwide Enhanced 911 systems. E 911 will help individuals in need. It will save lives and property and make all of us more secure.

TruePosition values the opportunity to appear before you today.