

PUBLIC SAFETY SERVICES IN FUTUREE WIRELESS COMMUNICATION

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As various forms of wireless communications become more pervasive, so will the expectation for this communication to support public safety functionality. The public switched telephone network presently supports many such public safety functions. The most familiar of these public safety functions is that of E911, for the provision of emergency response capability. A lesser known function is that of Telecommunication Service Priority (TSP), for the prioritization of service provisioning and restoration for national security or emergency preparedness (NS/EP) missions. Another such service is that of Government Emergency Telecommunication Service (GETS), which provides a means of increasing call completion probabilities during times of heavy congestion. Wireless Service Priority (WSP) is now being considered in the cellular space to provide increased probability of accessing resources during times of congestion. Together these services (and a few not mentioned) form the primary basis for public safety communications.

Most of these public safety services rely on traditional telephony technology. For example, Intelligent Network (IN) allows priority services, specialized routing, and network management capabilities for such services as GETS and WSP. However, this approach does not apply to emerging wireless systems. For example, there is a fundamental shift away from control environments such as IN, where one controls the network by monitoring and assigning resources to the end users. In fact, this is rather antithetic to many of the emerging wireless architectures; where control is highly decentralized. An obvious question this creates is how public safety services might be deployed in these emerging networks in a reasonably reliable manner.

In this paper we will consider in what space such public safety services appear to be applicable. We will then consider the technical problems associated with such service and propose some possible solutions. Finally, we will consider some of the policy implications that might arise.