

APPENDIX B: DEFINITIONS

Access America AO6: A National Performance Review (NPR) and Government Information Technology Services (GITS) Board report that addresses the importance of public safety communications interoperability and identifies five challenges to achieving interoperability — coordination, spectrum, standards, security, and funding.

Agency Size: A characteristic used to categorize agencies. For this study, agencies were divided into five size segments based on the number of uniformed personnel — fewer than 25, 25-49, 50-99, 100-249, and 250 or more.

Agency Type: A characteristic used to categorize agencies. For this study, agencies were divided into three type segments — fire departments, EMS departments, and special agencies (airport and harbor).

Alphanumeric Paging: A one-way communications capability that is typically a commercial service that may include local, regional, and/or world-wide coverage. Conversely, voice/tone paging is usually privately owned and operated, and is designed to provide paging for a specific entity and geographic area.

Analog Modulation Technique: A communications mode through which an analog representation of the information to be transmitted is impressed upon a carrier signal for transmission through a channel.

Band: In communications, the frequency spectrum between two defined limits. For example, the Ultra High Frequency (UHF) band is located from 300 Mhz to 3,000 Mhz in the radio frequency spectrum. (Also see Spectrum.)

Bias Analysis: Statistical analysis used to determine if significant differences exist between responses from different response groups. (See Appendix E for further details on the bias analyses for this report)

Cellular Digital Packet Data (CDPD): A wireless communications data service that divides information into data packets that are then transmitted over a cellular network.

Cellular Switched Data: The transmission of wireless data communications over a cellular network.

Chi-square Test: A test for evaluating the level of statistical significance attained by a bivariate analysis in a cross-tabulation. The chi-square test procedure assumes that no relationship exists between the two variables in the population and determines whether any apparent relationship obtained in a sample cross-tabulation is attributable to chance.

Conventional Radio System: A LMR system architecture similar to a telephone party-line in that the user determines availability by listening for an open channel before transmitting. Conversely, a trunked radio system automatically and dynamically assigns an available channel to the user.

Coverage: The geographic area included within the range of a wireless radio system.

Dead spots: The area, zone, or volume of space that is within the expected range of a radio signal, but in which the signal is not detectable and therefore cannot be received. Common causes of dead spots include depressions in the terrain and physical structures.

Digital Modulation Technique: A communications mode that places a digital data sequence on a carrier signal for transmission through a channel.

Electrocardiogram: An electronic medical device used to measure a person's heart rate.

Federal Communications Commission (FCC): A federal commission that develops and implements policy concerning interstate and international communications by radio, television, wire, satellite, and cable.

Frequency: In communications, the number of radio waves per unit of time. For example, a frequency of 150 Megahertz (MHz) equates to 150,000,000 radio waves per second.

Global Positioning System: A satellite-based navigation service that allows users to locate their position and in some cases, their velocity anywhere on the Earth.

Interference: In general, extraneous energy, from natural or man-made sources, that impedes the reception of desired signals.

Land Mobile Radio: A radio system that allows for wireless communications between base stations and land mobile stations (mobile or portable radios), or between land mobile stations.

Local Multi-point Distribution Service (LMDS): A fixed, point-to-multipoint, emerging technology that offers subscribers a variety of one- and two-way broadband services such as video conferencing, voice services, Local Area Network (LAN)/Wide Area Network (WAN), telemedicine, remote access to LANs, video-on-demand, real-time multimedia file transfer, and wireless local loop-based services.

Multi-point Multi-channel Distribution Service (MMDS): Also known as wireless cable, a fixed, point-to-multipoint, subscription-based broadband television and data service that closely resembles traditional hard-wired cable television service. Operators use over-the-air microwave frequencies rather than coaxial or fiber optic cable to transfer video and high-speed data to customers

Mobile Data Terminal: A wireless computer terminal installed in a vehicle that allows the user to receive and transmit a limited range of information.

Mobile Satellite Service (MSS): MSS is the term used to describe telecommunication services delivered via satellite to or from mobile users. MSS extends mobile communications beyond the range constraints of terrestrial-based wireless systems and allows mobile-to-fixed and mobile-to-mobile voice and data communications worldwide.

Mutual Aid Channel: A national or regional channel that has been set aside for use only in mutual aid interoperability situations, usually with restrictions and guidelines governing usage.

National Telecommunications and Information Administration (NTIA): An agency of the U.S. Department of Commerce, NTIA is the Executive Branch's principal voice on domestic and international telecommunications and information technology issues.

NPSPAC Guidelines: National Public Safety Planning Advisory Committee's nationwide public safety plan in the United States for the 821-824 MHz and 866-869 MHz frequency bands.

Pager: A communications device in which the intended receiver is alerted to receive a message or return a call.

Patch: A system that permits a mobile or portable radio on one system to communicate with one or more radios on a different system.

Personal Communications Services (PCS): A digital wireless communications service that provides enhanced features such as voice mail, call waiting, call forwarding, paging, and data transmission.

Project 25 Standards: A joint government/industry standards-setting effort to develop technical standards for the next generation of public safety radios, both voice and data.

Public Safety Organization: A local, state, or federal organization that is legally empowered and charged with protecting life, property, and natural resources (e.g., law enforcement agencies, fire departments, or emergency medical service providers).

Public Service Organization: A local, state, or federal organization that helps furnish, maintain, and protect the infrastructures (e.g., highways and utilities) that promote the public's safety and welfare.

Refarming: Refarming is an FCC effort to develop an overall strategy for using the spectrum in the private land mobile radio allocations more efficiently to meet future communications requirements.

Special Agencies: Agencies other than traditional fire and EMS departments. For this study, special agencies include airport and harbor fire and EMS departments.

Specialized Mobile Radio (SMR): A commercially operated radio system that provides land mobile communications services in the 800 MHz and the 900 MHz frequency bands.

Spectrum: Radio spectrum refers to the array of channels (frequencies), like the channels on a television, available for communications transmissions. Specific frequencies that have been allocated to the public safety community include:

Low-band VHF	25-50 MHz
High-band VHF	150-174 MHz
UHF	406-512 MHz
700 MHz*	746-806 MHz
800 MHz	806-869 MHz

* Pending the final adoption of usage rules by the FCC for this frequency band.

Static: An audible, but indiscernible, communications signal caused by interference with the source transmission.

T-Test: A statistical analysis that compares the mean responses of two groups of data to determine whether the difference in the means is significant.

Talk Group: A pre-programmed subgroup of radio users within a trunked LMR system that allows for communications among the subgroup without transmitting to all users of the system.

TIA-E102 Specifications: The Telecommunications Industry Association (TIA) issues technology standards related to telecommunications. The E102 specifications are a series of TIA specifications based on APCO Project 25 Standards for the next generation of public safety radios, both voice and data.

Trunked Radio System: An LMR system architecture that automatically and dynamically assigns an available channel to users. The term trunking connotes sharing of a number of channels by a group of users. Conversely, a conventional radio system requires a user to wait for an open channel before transmitting.

Voice/Tone Paging: A one-way communications capability that is usually privately owned and operated, and is designed to provide paging for a specific entity and geographic area. Conversely, alphanumeric paging is typically a commercial one-way paging service that may include multiple customers with local, regional, and/or world-wide coverage.