

services offered over 1xRTT and GPRS networks.

85. Do carriers offer any type of mobile Internet service in any portion of their service areas? In what percentage of their license and network footprints do carriers offer mobile Internet services? Are the same types of services available in all areas? What percent of carriers' licensed and network POPs are located in the areas where mobile Internet services are available? Does mobile data service availability vary between urban and rural areas?

86. The *Seventh Report* summarized the deployment of next-generation network technologies 1xRTT and GPRS on a county-by-county basis as of March 2002. For purposes of the Eighth Report, we seek information on the extent to which carriers have continued to upgrade their networks with these next-generation technologies since March 2002. In what portion of their license and network footprints have carriers deployed 1xRTT or GPRS, and in what portion do they offer advanced wireless services using these technologies? Are the same types of advanced wireless services available in all areas? Does the availability of advanced wireless services vary between urban and rural areas? What percent of carriers' licensed and network POPs are located in the areas where 1xRTT or GPRS-based mobile data services are available? Furthermore, what percent of the U.S. population has access to advanced wireless services provided by 1xRTT and/or GPRS?

87. Furthermore, we request comment on the actual data transfer speeds that most users experience with GPRS and with 1xRTT. Do the two technologies differ in this respect? To what degree are individual users' data transfer speeds depleted as more users log on to the network in a given area?

88. Finally, we request information on the extent to which mobile data providers are upgrading or plan to upgrade their networks with additional next generation technologies beyond GPRS and 1xRTT, such as EDGE, WCDMA, and 1X-EV.

vi. Pricing

89. In analyzing competition in the mobile data industry and the general evolution of this sector, we have examined the prices charged by providers for various mobile data services. While the analysis of pricing in the mobile telephone sector includes an estimate of per-minute pricing, such an estimate is not feasible in the mobile data sector given the variety of services and the variety of pricing techniques used by carriers. Therefore, the previous

CMRS Reports have summarized and compared, in some cases over time, the different prices carriers charge as well as various pricing methods they use.

90. For the Eighth Report, we request data from providers on the prices they charge for the various mobile data services they offer. How have these prices changed over time?

91. In addition to asking for actual pricing data, we also seek comment on the general trends related to mobile data pricing. To what extent do providers bundle mobile data services with each other and with voice service? Do providers offer mobile data services as add-ons service to voice service or as standalone services? Are mobile data services offered on a per-use basis or on a monthly subscription basis? Finally, do providers charge for mobile data services by the megabyte of data, by the minutes of usage, by the incremental service, and/or do they offer a flat rate for unlimited usage?

92. In addition, we seek information on the degree to which mobile data providers, in their pricing plans and marketing efforts, distinguish between mobile Internet services offered over 2G networks and those offered over next-generation 1xRTT and GPRS networks.

93. Are the prices of mobile data services generally the same across all the geographic areas in which carriers offer them? Do the prices vary by region, in particular between urban and rural areas? To the extent that they do vary by region, what are the reasons for this?

vii. WiFi

94. Over the past year, the WLAN technology, Wireless Fidelity or WiFi, has begun to play an increasingly important role in the mobile data industry. WiFi operates in the unlicensed spectrum bands using primarily the 802.11 wireless technology standards and allows data transfer speeds of up to 11 Mbps. While WiFi is not a CMRS service per se, we included a discussion of it in previous *CMRS Reports* because of its potential to affect the provision of CMRS services.

95. Users of mobile devices with WiFi capabilities or attachments can establish a high-speed, wireless connection to the Internet within a variety of settings, including restaurants, coffee shops, hotels, airports, convention centers, office buildings, and college campuses. These buildings or campuses generally connect to the Internet via a high-speed wireline technology such as a T-1 line, and WiFi users lose their high-speed wireless connections once they exit these settings. Given both the advantages and limitations of WiFi, do commenters believe that it competes

with commercial, interconnected mobile data services? Does WiFi have the potential to compete with these services to a greater extent in the future?

96. For purposes of the Eighth Report, we request data on the current extent of WiFi deployment and usage. How many people or what percent of the U.S. population subscribes to or uses WiFi services? In how many locations is WiFi currently available, and in which types of locations do most users establish WiFi connections? What data transfer speeds do most users experience with the various WiFi technology standards, including 802.11a, 802.11b, and 802.11g? In addition, what are the major drawbacks of WiFi access? To what degree are WiFi connections secure for end users? What, if any, interference problems are associated with WiFi access? Are voice services possible and available using WiFi connections?

97. Finally, we seek information on the other uses of unlicensed spectrum besides WiFi. Are both voice and data services available through these other types of connections? What is the extent of deployment of these other services?

III. Fixed Voice and Data Services

98. In addition to providing an analysis of competition in the commercial mobile services industry, the *CMRS Reports* have also included an appendix providing an overview of the current state of the fixed wireless industry. Some licensees of spectrum bands traditionally used for CMRS are using that spectrum to provide fixed wireless services. Furthermore, because most fixed wireless carriers have typically offered two-way, high-speed data services, the fixed wireless sector is discussed in greater detail in the Commission's annual report on the deployment of broadband services, pursuant to section 706 of the Telecommunications Act of 1996.

99. With the *Notice of Inquiry*, the Commission seeks the data from commenters on the state of the fixed wireless industry to incorporate into the Fixed Wireless Appendix of the Eighth Report. Who are the major providers of fixed wireless services? Have the carriers that experienced financial difficulties over the past two years made progress towards recovery and formed new business strategies? Which spectrum bands are currently being used by operators to deploy fixed services, including the unlicensed spectrum bands? In what portion of the United States, measured by both population and land area, are fixed wireless services available? To what extent have fixed wireless networks been deployed in rural areas? How many fixed wireless