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EXHIBIT 1: Explanation of the Data and Charts

The material herein comprises our response to a Congressional request for data regarding usage of the 800 MHz band, received on July 8, 2002. In the time frame allotted, we have done the best that we could do to provide useful information. In evaluating this data, it is important to keep certain limitations in mind. First, the data in this report represents the state of our licensing records as of July 12, 2002. Our data base is not stagnant. Licenses to use the 800 MHz band may be transferred, modified, or cancelled over time. Second, all licenses in the 800 MHz band are not equivalent. In this regard, the Commission issues land mobile licenses in the lower 800 MHz bands to a diverse set of licensees, *i.e.*, the public safety (PS), business/industrial/land transportation (B/ILT), and specialized mobile radio (SMR) licenses that are the subject of this report. It should also be understood that, as discussed in greater detail below, there is a fundamental difference between site-based licenses and geographic-area licenses. With site-based licenses, the discrete frequencies, locations and number of base stations licensed to a given licensee are contained in Commission records. With geographic-area licenses, Commission records do not reflect the number of base stations in use by a licensee, the frequencies in use at each base station, or the discrete base station locations within the licensed geographic-area. Lastly, the staff has not performed any engineering or technical analysis of potential interference in preparing this report. Differences in terrain and geographical location can dramatically impact interference potential. Nothing in this report is meant to indicate whether interference among licensees is likely to occur.

Site-Based Licensing

A majority of the licenses included in this report were issued on a site-by-site basis. For example, the PS, B/ILT, or SMR applicant specified a particular latitude/longitude (location) where it would construct its base station, and requested specific frequencies on which to operate from that location. Each land mobile license record contains up to six distinct locations and lists the frequencies authorized at each location.

Description of Site-Based Licensing Data The site-based license data available to the Commission may be analyzed in a number of different ways. The analysis undertaken here reflects direction we have received from congressional staff following the July 8, 2002 letter. First, per our discussions with Congressional staff, we regard the phrase "Top 100 markets" in the request as encompassing the top 100 Urbanized Areas (UA's) based on population density as defined by the Year 2000 Census. This information is publicly available over the internet and may be found at http://www.census.gov/geo/www/ua/ua_2k.html. See Exhibit 3. The Census Bureau identifies and tabulates data for UA's solely for the presentation and comparison of census statistical data.¹

Second, we have extracted data from our Universal Licensing System (ULS) as follows. We extracted all license records where the radio service was PS (codes GP, YP, GF, YF²), B/ILT (codes GB, YB, GO, YO³)

¹ We have grouped licenses by UA's only for the purposes of this report; we do not necessarily believe these market sizes are appropriate for analyzing the issue of 800 MHz band interference.

² The GF and YF service codes represent, respectively conventional (*i.e.* non-trunked) and trunked public safety systems. The GP and YP service codes represent, respectively, conventional and trunked Public Safety radio systems operating from 806 to 816 MHz and 851-861 MHz. In a trunked system, channels are automatically assigned to users by a computer, resulting in more efficient use of the spectrum.

and specialized mobile radio (SMR) (both Nextel and non-Nextel (codes GX, YX⁴)) for the paired 806-821 MHz and 851-866 MHz bands.⁵ There are multiple rows in the extracted data for many licenses because each license may have several locations in which the licensee is authorized to operate on the above frequencies. Note that the extracted data contains only frequencies in the 851-866 MHz bands; the corresponding mobile transmit frequencies are located 45 MHz below the base transmit frequencies but are not listed.

Third, we have determined which locations in our licensing records meet the radio service and spectrum criteria above, as well as falling within one of the top 100 UA's. *See* Exhibit 2. For purposes of this report, a base station location is considered within a UA when the latitude/longitude of that location is within the UA boundary.⁶

Fourth, after identifying all licensed locations that fall within one of the top 100 UA's, we summarized the data in table form to show for each service category the number of licensed locations on each frequency within the UA. *See* Exhibit 4. We believe the charts supplied herewith, and the scatter diagram described below, present the usage of the licenses adequately. Also, for each UA we have provided an aggregate measure of the spectrum used by licensees in each service category. In making this calculation, we assumed that a frequency was used for a category if at least one location within the UA is licensed to operate on that frequency. However, we did not count a frequency multiple times if there were multiple locations on the same frequency within the UA.

Fifth, after describing the usage (by frequency and in the aggregate) of each frequency within each UA, we constructed scatter diagrams for each UA that describe the interleaving of frequencies used by the four categories⁷ of licensees. *See* Exhibit 5. For example, in a given UA, we provide a scatter diagram point for each frequency if it is in use in at least one location by a licensee in each category. The absence of a point means that no licensee in the category has a licensed location in the UA on that frequency. The scatter diagram for each UA spans six pages (100 frequencies per page) to maintain readability.

Geographic-Area Licensing

Separate from the site-based data and charts, we provide frequency use information about auction winners who have obtained geographic licenses. The FCC has implemented an "overlay" licensing concept for these land mobile bands whereby incumbent licensees are grandfathered and afforded protection from co-channel interference. Thus, auction winners may construct base stations anywhere within their auctioned market on any of their licensed frequencies so long as they protect co-channel incumbents. Given that auction winners are not generally required to notify the Commission regarding the locations of their base stations, it was not possible to integrate data for geographic-area licensed licensees into the spreadsheets and charts in Exhibits 4 and 5. However, we have provided a separate listing of geographic-area licensees by market and channel block in Exhibit 6.

³ The GB and YB service codes represent, respectively, conventional and trunked business radio systems. The GO and YO service codes represent, respectively, conventional and trunked industrial/land transportation radio systems.

⁴ The GX and YX service codes represent, respectively, conventional and trunked SMR systems.

⁵ As per clarifying instructions from the Congressional staff, this report does not include data on public safety facilities operating on the "National Plan" channels in the 821-824 MHz and 866-869 MHz bands.

⁶ Base stations at locations outside the UA boundaries that may serve mobile units located inside the UA have not been included. Identifying such stations would have required extensive and extremely time-consuming calculation of coverage contours. Such calculations were not possible within the time allotted for preparation of this report.

⁷ PS, B/ILT, Nextel SMR, Non-Nextel SMR.

Description of Geographic-Area Licensing Data We have extracted licensing data resulting from the auctions of the 806-821 MHz and 851-866 MHz bands. See Exhibit 6. These licenses were auctioned in “blocks” of spectrum lettered A-V as described in the table below:

Reference Table of Auctioned Licenses

Auctioned Block	Channels	Base Station Transmit Frequencies (MHz)⁸
A	401-420	861.0-861.5
B	421-480	861.5-863.0
C	481-600	863.0-866.0
D	1 – 25	851.0125 - 851.6125
DD	26 - 50	851.6375 - 852.2375
E	51 – 75	852.2625 - 852.8625
EE	76 – 100	852.8875 - 853.4875
F	101 – 125	853.5125 - 854.1125
FF	126 – 150	854.1375 - 854.7375
G	201,241,281, 321,361	856-860.0125
H	202,242,282, 322,362	856-860.0375
I	203,243,283, 323,363	856-860.0625
J	204,244,284, 324,364	856-860.0875
K	205,245,285, 325,365	856-860.1125
L	206,246,286, 326,366	856-860.1375
M	207,247,287, 327,367	856-860.1625
N	208,248,288, 328,368	856-860.1875
O	221,261,301, 341,381	856-860.5125
P	222,262,302, 342,382	856-860.5375
Q	223,263,303, 343,383	856-860.5625
R	224,264,304, 344,384	856-860.5875
S	225,265,305, 345,385	856-860.6125
T	226,266,306, 346,386	856-860.6375
U	227,267,307, 347,387	856-860.6625
V	228,268,308, 348,388	856-860.6875

The Commission auctioned licenses for each “block” in each of 175 Economic Areas (EA’s) as defined by the Bureau of Economic Analysis, Department of Commerce. As described above, the auction winner for a particular block may place base stations anywhere within its licensed market and on any of its licensed frequencies so long as it provides protection to co-channel incumbent licensees. We have included the map of the 175 EA’s as Exhibit 7 to this report.

⁸ The mobile station transmit frequencies are 45 MHz below the base station transmit frequencies.