



PUBLIC NOTICE

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GUIDANCE ON ANNUAL REPORTS AND OTHER REPORTING REQUIREMENTS FOR RECIPIENTS OF SUPPORT UNDER PHASE I OF THE MOBILITY FUND (INCLUDING TRIBAL MOBILITY FUND)

2014 ANNUAL REPORT FILING DEADLINE EXTENDED TO JULY 31, 2014

SPECIFICATIONS FOR SHAPEFILE DATA TO BE SUBMITTED WITH FCC FORM 690

WT Docket No. 10-208

1. In this Public Notice, the Wireless Telecommunications Bureau and Wireline Competition Bureau (“Bureaus”) extend the filing deadline for the July 2014 Mobility Fund Phase I annual report by thirty days and provide guidance to Mobility Fund Phase I (including Tribal Mobility Fund Phase I) support recipients on the coverage reporting requirements for annual reports and for requesting disbursements of support.

2. Section 54.1009 of the Commission’s rules requires winning bidders authorized to receive Mobility Fund Phase I support to submit an annual report no later than July 1 in each of the five years after support is authorized.¹ On our own motion, we grant a brief waiver of the July 1, 2014 filing deadline for the 2014 annual report and establish a new filing deadline of July 31, 2014 in order to allow carriers additional time to prepare and submit the coverage data in the format specified by this Public Notice.

3. This Public Notice provides information and filing instructions concerning the coverage data to be submitted on FCC Form 690.² In particular, this Public Notice contains specifications for the electronic shapefiles that must be used to submit coverage information, and guidance on how to satisfy coverage reporting requirements for those locations for which recipients are unable to complete drive

¹ 47 C.F.R. § 54.1009.

² See 47 C.F.R. §§ 54.1004(a)(4), 1006(c), 1009; Mobility Fund Phase I Auction Scheduled for September 27, 2012; Notice and Filing Requirements and Other Procedures for Auction 901, *Public Notice*, AU Docket No. 12-25, DA 12-641, 27 FCC Rcd 4725, 4739 ¶¶ 34-35 (2012) (*Auction 901 Procedures Public Notice*); Tribal Mobility Fund Phase I Auction Rescheduled for December 19, 2013; Notice and Filing Requirements and Other Procedures for Auction 902, *Public Notice*, AU Docket No. 13-53, DA 13-1672, 28 FCC Rcd 11628, 11688-90 ¶¶ 204-10 (2013) (*Auction 902 Procedures Public Notice*). See also In the Matter of Connect America Fund, A National Broadband Plan for Our Future, Establishing Just and Reasonable Rates for Local Exchange Carriers, High-Cost Universal Service Support, Developing an Unified Intercarrier Compensation Regime, Federal-State Joint Board on Universal Service, Lifeline and Link-Up, Universal Service Reform — Mobility Fund, WC Docket No. 10-90, GN Docket No. 09-51, WC Docket No. 07-135, WC Docket No. 05-337, CC Docket No. 01-92, CC Docket No. 96-45, WC Docket No. 03-109, WT Docket No. 10-208, *Report and Order and Further Notice of Proposed Rulemaking*, 26 FCC Rcd 17663, 17816, ¶¶ 466-67, and 17817 ¶¶ 470-474 (2011) (*USF/ICC Transformation Order*), upheld on review *In re: FCC 11-161*, ___ F.3d ___, 2014 WL 2142106 (10th Cir. May 23, 2014).

tests. The Bureaus also notify Mobility Fund Phase I support recipients of the availability of the Commission’s MFI Geospatial Data Collection interface, which contains templates for electronic shapefiles,³ and the new electronic FCC Form 690, which must be used to electronically file annual and disbursement reports.⁴

Annual and Disbursement Report Requirements – Annual Reports Due July 1; Disbursement Reports Due Prior to Additional Support Payments

4. Each carrier authorized to receive Mobility Fund Phase I support must submit an annual report (FCC Form 690) on its use of the support no later than July 1 in each of the five years after support is authorized, pursuant to section 54.1009 of the Commission’s rules.⁵ In addition, each Mobility Fund Phase I support recipient must submit an FCC Form 690 prior to receiving its second and third disbursements of support.⁶ Service coverage data in the form will be used to validate that the recipient carriers are meeting or have met their performance obligations for Mobility Fund Phase I support and are eligible to continue receiving support, if applicable.⁷ A carrier requesting a disbursement based on completion of project milestones must submit test data supporting the assertion of coverage completed.⁸

Submitting Reports Electronically Using FCC Form 690

5. Annual reports must be filed as described below on Form 690 with the Commission, the Universal Service Administrative Company (“USAC”), and any relevant state commission or other authorities on or before the relevant deadline. Disbursement reports must be filed with the Commission and USAC. Each filer must complete the certifications required by section 54.1009.⁹ Detailed instructions for completing and submitting the Form 690 may be found in the “Instructions for Completing FCC Form 690” document which is available by clicking on the “Instructions” link in the Form 690 portion of USAC’s forms website, <http://www.usac.org/hc/tools/forms.aspx>.

MFI Geospatial Data Collection Interface

6. The MFI Geospatial Data Collection interface is a web-based portal through which each Mobility Fund Phase I filer must submit its required electronic shapefiles. The MFI Geospatial Data Collection interface is accessible at <https://mfigeo.fcc.gov>. Step-by-step instructions on how to upload these files are available at <http://www.fcc.gov/encyclopedia/mobility-fund-phase-i-annual-and->

³ The Commission’s MFI Geospatial Data Collection site is located at <https://mfigeo.fcc.gov>. Templates for the electronic shapefiles to be used for the submission of coverage data are also available at <http://www.fcc.gov/encyclopedia/mobility-fund-phase-i-annual-and-disbursement-reporting>.

⁴ An electronic version of the FCC Form 690 is available at Universal Service Administrative Company’s (USAC) website <http://www.usac.org/hc/tools/forms.aspx>. The Office of Management and Budget has approved the information collections contained in Form 690 and associated Commission rules, and those rules are now effective. *See* Annual Report for Mobility Fund Phase I Support and Record Retention, 78 Fed. Reg. 45,071 (July 26, 2013).

⁵ 47 C.F.R. § 54.1009.

⁶ *USF/ICC Transformation Order*, 26 FCC Rcd at 17816 ¶¶ 466-467.

⁷ *See* 47 C.F.R. §§ 54.1004, 1005, 1009.

⁸ *See USF/ICC Transformation Order*, 26 FCC Rcd at 17793 ¶ 370, 17816 ¶¶ 466.

⁹ 47 C.F.R. §§ 54.1009(a)(4) (reasonable rates), (a)(5) (tribal engagement certification for carrier serving Tribal lands), (b) (certification that agent is authorized to submit on behalf of reporting carrier). The filer also certifies, under penalty of perjury, to the accuracy of any information submitted in its annual or disbursement report. Willful submission of a false statement to the Commission may result in penalties, including monetary forfeitures and/or criminal prosecution. *See* 47 U.S.C. §§ 502, 503; 18 U.S.C § 1001.

[disbursement-reporting](https://esupport.fcc.gov/request.htm).¹⁰ Filers with questions or who need technical assistance can email <https://esupport.fcc.gov/request.htm> or call (877) 480-3201 (TTY: (717) 338-2824).

Basis for FCC Form 690 Coverage Data Submissions

7. Section 54.1009 of the Commission's rules requires the submission of electronic shapefile site coverage plots illustrating the area newly reached by 3G or 4G mobile services as well as any test data if such testing has been conducted.¹¹ This notice provides further guidance on the data to be submitted in a shapefile format.

8. *Broadband and Voice.* Separate shapefiles depicting the Mobility Fund Phase I network coverage, one for broadband and one for voice, must be submitted illustrating the area newly reached by 3G or 4G mobile services.¹² The data associated with each file is specified in Appendix A of this notice.

9. *Drive Tests.* Drive testing is the standard by which compliance with Mobility Fund Phase I performance obligations will be determined.¹³ Section 54.1009(a)(3) of the Commission's rules requires a carrier to submit data received from drive tests if the carrier has done any coverage testing. If any such testing has not yet been conducted, drive test data is not required to be submitted in the annual report. However, a carrier requesting a disbursement based on completion of project milestones must submit test data supporting the assertion of coverage completed. (As discussed below, if a carrier is unable to complete drive tests for all areas for which it is seeking support, it may satisfy coverage reporting requirements for undriveable areas using propagation study data or, for Auction 902 winning bidders, scattered site testing data.)

10. A filer should provide drive test information for all driveable roads it is using to meet the required coverage (for Auction 901 support recipients, percentage of road miles covered in the winning bid area; for Auction 902 support recipients, percentage of population in the winning bid area). The Bureaus expect that each carrier, at a minimum, will be able to provide drive test information for all roads classified as S1100, primary roads; S1200, secondary roads; and S1400, local and rural roads and city streets. A carrier may not assert that it was unable to drive test a designated road merely because the road is classified as S1500, 4WD vehicular trails; S1640, service drives; or S1740, private roads for service vehicles. When some portions of a roadway are not passable and/or accessible, carriers are required to drive test all portions that are passable and accessible.

11. *Propagation Studies.* We clarify that, in areas where drive tests cannot be completed because of, for example, physical or legal obstacles, a carrier may submit coverage data based on propagation studies developed with radiofrequency planning software.

12. In the event that a portion of a road is unable to be drive tested, that carrier may submit a propagation map of the coverage along the road(s) or in the populated areas, as appropriate,¹⁴ with an

¹⁰ After logging into the site using the filer's CORES login information, a Mobility Fund Phase I filer will enter basic contact information on a cover page and will then be able to submit data by uploading zipped shapefiles to the site. Shortly after uploading data to the site, the filer will be able to view the submitted data in an embedded map on the interface. If a filer discovers errors or inaccuracies after viewing the submitted map data, it can resubmit updated data before certifying.

¹¹ 47 C.F.R. §§ 54.1009(a)(1), (a)(3). Section 54.1006 sets out the technical standards and construction deadlines for 3G or 4G services for which Mobility Fund Phase I support may be authorized. 47 C.F.R. §§ 54.1006(a), (b).

¹² 47 C.F.R. 54.1009(a)(1).

¹³ *See id.*

¹⁴ Coverage for purposes of support awarded through Auction 901 is measured on the basis of road miles. *See Auction 901 Procedures Public Notice*, 27 FCC Rcd at 4730 ¶ 10. For Auction 902 support recipients, the

(continued....)

explanation describing the circumstances and reason(s) for the use of the propagation map and the methodology used to prepare the map. Such reports should include relevant supporting information, such as photos showing obstacles or closures, maps, and legal documents.

13. *Scattered Site Testing.* A carrier that obtained support through Auction 902, the Commission's Tribal Mobility Fund Phase I auction held in February 2014, may provide coverage data based on scattered site testing if it is unable to perform drive tests in certain areas. Scattered site testing is acceptable for Auction 902 recipients because the Commission is measuring coverage for Tribal Mobility Fund Phase I support based on a population-based metric.¹⁵ Thus, a recipient of support won in Auction 902 may submit data based either on propagation studies or scattered site tests for those areas on which it is unable to perform drive tests.

FCC Form 690 Data Submissions

14. Appendix A of this Public Notice provides guidance on the form and format of the required data submissions to be included with the annual and disbursement reports in accordance with sections 54.1009(a)(1) and (3) of the Commission's rules. Each Form 690 submission must include, among other items, electronic shapefiles and text files explaining each shapefile map for coverage and performance reporting.¹⁶ In addition, the Commission has developed a web-based interface for filers to submit electronic shapefiles to the Commission.¹⁷ The Commission's portal will create a shapefile package which a filer may use for submission to USAC as well. Shapefile templates are available at <http://www.fcc.gov/encyclopedia/mobility-fund-phase-i-annual-and-disbursement-reporting> and at the MFI Geospatial Data Collection site, <https://mfigeo.fcc.gov>.¹⁸

Additional Information

15. For further information concerning this notice, please contact Rita Cookmeyer or Audra Hale-Maddox, Auctions and Spectrum Access Division, Wireless Telecommunications Bureau at (202) 418-0660.

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Commission chose to measure coverage based on population rather than road miles. *See Auction 902 Procedures Public Notice*, 28 FCC Rcd at 11633 ¶ 12; *see also USF-ICC Transformation Order*, 26 FCC Rcd at 17822 ¶ 488.

¹⁵ The Bureaus announced prior to Auction 901 that entities winning support through that auction would not be permitted to use scattered site testing as a basis for demonstrating network coverage. *See Auction 901 Procedures Public Notice*, 27 FCC Rcd 4725, 4772 ¶ 173 n. 247.

¹⁶ 47 C.F.R. §§ 54.1006(c), 1009(a)(1)-(3).

¹⁷ This portal was developed so that the properties of electronic shapefiles may be retained after being submitted. The Commission's existing Electronic Comment Filing System converts all files, including any shapefile formats, to Adobe Acrobat pdf files and this conversion process may limit the usefulness and readability of those files.

¹⁸ Filers should log in to the MFI Geospatial Data Collection site using the same FRN and password as is used for Form 680 to access shapefile templates and other instructions.

APPENDIX A

Specifications for FCC Form 690 Submission

I. General

Carriers receiving Mobility Fund Phase I (MFI) support must submit electronic shapefiles demonstrating their progress in meeting coverage obligations in order to receive further support disbursements. Shapefiles must be submitted in ESRI compatible shapefile format such that each shapefile represents the coverage for a single Mobility Fund Phase I study area. As shapefiles typically consist of 3 to 9 individual files, the shapefile for the study area should be submitted as a single, zipped file containing all the component files. The shapefile and encapsulating zip file names should at a minimum contain the 6-digit study area code and state abbreviation (123456_ST). Shapefile templates are available at <http://www.fcc.gov/encyclopedia/mobility-fund-phase-i-annual-and-disbursement-reporting>.

II. Broadband Shapefile

Filers should submit polygons in an ESRI format representing geographic coverage for the transmission technology (e.g. EV-DO, HSPA+, LTE, etc.) deployed in the frequency band (e.g., 700 MHz, Cellular, AWS, PCS, etc.). The data associated with each polygon should indicate at least the minimum upload and download data speeds associated with that network technology in that frequency band, and the coverage area polygon should depict the boundaries where users should expect to receive those speeds. If a filer provides coverage using a variation in technology, frequency band, or speed in the same study area code, a separate polygon is required to be submitted.

Data Format:

| Field | Description | Type | Example |
|------------|--|---------|---------------|
| SAC | MFI Study Area Code – Six digit code | Integer | 123456 |
| ENTITYNAME | Name of the MFI Winning Bidder/Filer | Text | U.S. Wireless |
| TECHNOLOGY | Category of technology for the provision of service (see Codes, Table 1) | Integer | 81 |
| SPECTRUM | Code for the spectrum used for the provision of service (see Codes, Table 2) | Integer | 91 |
| MINDOWN | The minimum expected downstream bandwidth in Mbps. | Float | 0.768 |
| MINUP | The minimum expected upstream bandwidth that is offered with the above minimum downstream bandwidth in Mbps. | Float | 0.200 |

Details:

1. All map areas must be closed, non-overlapping polygons with a single, unique identifier.
2. Any variation in any of the required fields necessitates the creation of a separate polygon showing the relevant coverage.
3. The shapefile must have an assigned projection with an accompanying .prj file.
4. The shapefile must use unprojected (geographic) WGS84 geographic coordinate system.
5. The coverage boundaries should have a resolution of 100 meters (approximately three arc-seconds) or better. An arc-second represents the distance of latitude or longitude traversed on the earth's surface while traveling one second (1/3600th of a degree). *See* <http://www.esri.com/news/arcuser/0400/wdside.html>. Three arc-seconds is a common resolution

of terrain databases. See USGS Standards for Digital Elevation Models, Part 1-General, at 1-2, 1-4, <http://nationalmap.gov/standards/pdf/1DEM0897.PDF>.

6. The shapefile should be submitted as a zip archive. Do not include folders in the zip file.
7. In addition to the shapefile, each zip must include metadata or a plain text “readme” file that contains a comprehensive explanation of the methodology employed to generate the map layer including any necessary assumptions and an assessment of the accuracy of the finished product. Also provide the propagation model used, along with the appropriate propagation model optimization or fine tuning parameters.

III. Voice Shapefile

A separate electronic shapefile is to be submitted with polygons in an ESRI shapefile format depicting the network coverage areas representing commercially-available mobile voice service. The polygons should reflect where users should expect to be able to make, maintain, and receive voice calls. A filer should submit a separate polygon for each technology that is used to provide mobile voice coverage (e.g., HSPA+, LTE, etc.) in the study area, and should indicate which frequency bands it uses to provide voice service using that technology.

Data Format:

| Field | Description | Type | Example |
|------------|--|---------|---------------|
| SAC | MFI Study Area Code – Six digit code | Integer | 123456 |
| ENTITYNAME | Name of the MFI Winning Bidder/Filer | Text | U.S. Wireless |
| TECHNOLOGY | Category of technology for the provision of service (see Codes, Table 1) | Integer | 81 |
| SPECTRUM | Code for the spectrum used for the provision of service (see Codes, Table 2) | Integer | 91 |

Details:

1. All map areas must be closed, non-overlapping polygons with a single, unique identifier.
2. Any variation in any of the required fields necessitates the creation of a separate coverage polygon.
3. The shapefile must have an assigned projection with an accompanying .prj file.
4. The shapefile must use unprojected (geographic) WGS84 geographic coordinate system.
5. The coverage boundaries should have a resolution of 100 meters (approximately three arc-seconds) or better. An arc-second represents the distance of latitude or longitude traversed on the earth's surface while traveling one second (1/3600th of a degree). See <http://www.esri.com/news/arcuser/0400/wdside.html>. Three arc-seconds is a common resolution of terrain databases. See USGS Standards for Digital Elevation Models, Part 1-General, at 1-2, 1-4, <http://nationalmap.gov/standards/pdf/1DEM0897.PDF>.
6. The shapefile should be submitted as a zip archive. Do not include folders in the zip file.
7. In addition to the shapefile, each zip file should include metadata or a plain text “readme” file that contains a comprehensive explanation of the methodology employed to generate the map layer including any necessary assumptions and an assessment of the accuracy of the finished product. Also provide the propagation model used along with the appropriate propagation model optimization or fine tuning parameters.

IV. Drive Test/Scattered Site Test Shapefiles

Submitted test data should be presented as a separate electronic shapefile with point feature types in an ESRI shapefile format depicting the drive test or scattered site test results and roads or area covered. A filer should indicate the download and upload data speeds as points along roads or sites.¹⁹

Data Format:

| Field | Description | Type | Example |
|--------------------------|---|---------|---------------|
| SAC | MFI Study Area Code – Six digit code | Integer | 123456 |
| ENTITYNAME | Name of the MFI Winning Bidder/Filer | Text | U.S. Wireless |
| TECHNOLOGY | Technology for the provision of service | Text | EVDO |
| CHANWIDTH | Carrier Channel Width in MHz | Float | 1.25 |
| FREQBAND | Carrier Frequency Band(s) in MHz | Text | 1855 |
| DATE | Test Date: mm/dd/yyyy | Date | 01/01/2014 |
| TIME | Test Time in 24 hour format: hh:mm:ss | Text | 12:55:59 |
| LATDIR | Latitude Direction: N=North, S=South | Text | N |
| LATITUDE | Latitude in Decimal Degrees | Float | 36.512 |
| LONDIR | Longitude Direction: E=East, W=West | Text | W |
| LONGITUDE | Longitude in Decimal Degrees | Float | 80.408 |
| MILEMARKER ²⁰ | Road Mile Segment Marker | Float | 125.2 |
| DOWNLOAD | Downstream bandwidth in Mbps | Float | 0.768 |
| UPLOAD | Upstream bandwidth in Mbps | Float | 0.200 |
| LATENCY | Latency in milliseconds | Integer | 500 |

Details:

1. All features must be points representing drive test results with a unique identifier for each point.
2. The shapefile must have an assigned projection with an accompanying .prj file.
3. The shapefile must use unprojected (geographic) WGS84 geographic coordinate system.
4. The features should have a resolution of 100 meters (approximately three arc-seconds) or better. An arc-second represents the distance of latitude or longitude traversed on the earth’s surface while traveling one second (1/3600 of a degree).²¹ Three arc-seconds is a common resolution of terrain databases.²²
5. The shapefile should be submitted as a zip archive. Do not include folders in the zip file.
6. In addition to the shapefile, each zip must include metadata or a plain text “readme” file that contains a comprehensive explanation of the methodology employed to generate the map layer including any necessary assumptions and an assessment of the accuracy of the finished product. The explanation should include information on the drive test equipment used (maker, model and firmware/software version), antenna model and cable if external antennas are used. Provide a diagram of test equipment setup configuration, testing methodology and parameters such as

¹⁹ For Tribal Mobility Fund Phase I, the shapefile should depict the scattered site points, if scattered site testing is being used.

²⁰ Milemarker information is not required for Tribal Mobility Fund Phase I scattered site tests.

²¹ See <http://www.esri.com/news/arcuser/0400/wdside.html>.

²² See USGS Standards for Digital Elevation Models, Part 1-General, at 1-2, 1-4, <http://nationalmap.gov/standards/pdf/1DEM0897.PDF>.

sampling time, averaging time/distance of raw data, IP protocol, test file size, and any additional post processing of the data.

V. Propagation Study Shapefiles

Propagation Study Shapefiles / Road Miles – Submitted propagation maps should be presented as a separate electronic shapefile with line feature types in an ESRI shapefile format. The methodology should identify the RF planning software, version, terrain data resolution, clutter data, and the propagation model used, along with the appropriate propagation model optimization parameters.

Data Format:

| Field | Description | Type | Example |
|------------|--|---------|---------------|
| SAC | MFI Study Area Code – Six digit code | Integer | 123456 |
| ENTITYNAME | Name of the MFI Winning Bidder/Filer | Text | U.S. Wireless |
| ROADNAME | Name of road | Text | Fairfax Drive |
| ROADMILES | Length in miles of road segment | Float | 2.8 |
| STATUS | Status of Upload/Download Bandwidth for road segment: “Pass” or “Fail” | Text | Pass |

Details:

1. All features must be lines representing propagation study linear results with a unique identifier for each line segment.
2. Any variation in any of the required fields necessitates the creation of a separate linear feature showing the relevant propagation study results (e.g. adjoining segments of similar attributes shall be dissolved into single segments)
3. The shapefile must have an assigned projection with an accompanying .prj file.
4. The shapefile must use unprojected (geographic) WGS84 geographic coordinate system.
5. The features should have a resolution of 100 meters (approximately three arc-seconds) or better. An arc-second represents the distance of latitude or longitude traversed on the earth's surface while traveling one second (1/3600th of a degree). *See* <http://www.esri.com/news/arcuser/0400/wdside.html>. Three arc-seconds is a common resolution of terrain databases. *See* USGS Standards for Digital Elevation Models, Part 1-General, at 1-2, 1-4, <http://nationalmap.gov/standards/pdf/1DEM0897.PDF>.
6. The shapefile should be submitted as a zip archive. Do not include folders in the zip file.
7. In addition to the shapefile, each zip must include metadata or a plain text “readme” file that contains a comprehensive explanation of the methodology employed. The methodology should identify the RF planning software, version, terrain data resolution, clutter data and the propagation model used along with the appropriate propagation model optimization parameters.

Propagation Study Shapefiles / Population – Submitted propagation maps should be presented as a separate electronic shapefile representing geographic coverage in an ESRI shapefile format. The methodology should identify the RF planning software, version, terrain data resolution, clutter data, and the propagation model used, along with the appropriate propagation model optimization parameters.

Data Format:

| Field | Description | Type | Example |
|------------|--------------------------------------|---------|-----------------|
| SAC | MFI Study Area Code – Six digit code | Integer | 123456 |
| ENTITYNAME | Name of the MFI Winning Bidder/Filer | Text | U.S. Wireless |
| BLOCKID | Census pop block unique identifier | Text | 010010211002009 |

| | | | |
|------|---|-------|-----|
| POPS | Number of pops that passes the required speed thresholds (both upload and download) | Float | 570 |
|------|---|-------|-----|

Details:

1. All features must be polygons representing propagation study results that satisfy the required speed thresholds (both upload and download) for each population census block.
2. Any variation in any of the required fields necessitates the creation of a separate polygons feature showing the relevant propagation study results.
3. The shapefile must have an assigned projection with an accompanying .prj file.
4. The shapefile must use unprojected (geographic) WGS84 geographic coordinate system.
5. The features should have a resolution of 100 meters (approximately three arc-seconds) or better. An arc-second represents the distance of latitude or longitude traversed on the earth's surface while traveling one second (1/3600th of a degree). *See* <http://www.esri.com/news/arcuser/0400/wside.html>. Three arc-seconds is a common resolution of terrain databases. *See* USGS Standards for Digital Elevation Models, Part 1-General, at 1-2, 1-4, <http://nationalmap.gov/standards/pdf/1DEM0897.PDF>.
6. The shapefile should be submitted as a zip archive. Do not include folders in the zip file.
7. In addition to the shapefile, each zip must include metadata or a plain text “readme” file that contains a comprehensive explanation of the methodology employed. The methodology should identify the RF planning software, version, terrain data resolution, clutter data and the propagation model used along with the appropriate propagation model optimization parameters.

Codes

| Code | Technology |
|------|---|
| 80 | Terrestrial Mobile Wireless – WCDMA/HSPA |
| 81 | Terrestrial Mobile Wireless – HSPA+ |
| 82 | Terrestrial Mobile Wireless – EVDO/EVDO Rev A |
| 83 | Terrestrial Mobile Wireless – LTE |
| 88 | Terrestrial Mobile Wireless – Other |

| Code | Spectrum Band |
|------|--|
| 90 | 700 MHz Band |
| 91 | Cellular Band |
| 92 | Specialized Mobile Radio (SMR) Band |
| 93 | Advanced Wireless Services (AWS) 1 Band |
| 94 | Broadband Personal Communications Service (PCS) Band |
| 96 | Broadband Radio Service/Educational Broadband Service Band |
| 101 | Advanced Wireless Services (AWS) 3 Band |
| 102 | Advanced Wireless Services (AWS) 4 Band |
| 103 | Other |