

DEMONSTRATION FIELD AREA NETWORK – REQUEST FOR INFORMATION – 1/23/2017

1.0 Executive Summary

Select Spectrum, on behalf of our client Beach Point Capital (BPC), is seeking information on how one or more interested contractors could create a cost-effective solution to construct a Demonstration Field Area Network “D-FAN” in approximately 19 of BPC’s 21 licensed geographic areas/Major Economic Areas (MEAs). This D-FAN must utilize BPC’s Upper 700 MHz A Block licenses¹. The primary purpose of D-FAN will be to demonstrate the capabilities of the Upper 700 MHz A Block, and the equipment that utilizes it, to management and engineering personnel in utilities and other critical infrastructure industries. We believe that the technology D-FAN will demonstrate is capable of providing a new and innovative alternative for technological applications that utilities and critical infrastructure industries can deploy. Such applications include machine to machine (IoT) technology solutions, point-multipoint data collection, point-to-point links, advanced Land Mobile Radio “LMR” and similar uses². We believe with the current manufacturer-specific technology and development of standards, such as IEEE 802.16s GRIDMAN and 3GPP LTE-M Narrowband IoT (NB-IoT), that the Upper 700 MHz A Block is fast becoming effective and essential spectrum for a wide range of industrial applications.

This is a **Request for Information (RFI) only**. [See Attachment 1 for disclaimers.](#)

2.0 Background

2.1 License Locations Geographic Breakdown

Below is a list of the licenses held by BPC (see **Attachment 2** for map):

Location/MEA ³	Call Sign ⁴	Population / POPs ⁵
Boston	WPRR298	9,763,518
New York City	WPRR299	32,492,466
Philadelphia	WPRR300	9,108,380
Richmond	WPRR301	4,840,930

¹ See section 3.3.5 for project coverage goals and specifications.

² LTE, WiMAX, and other wireless data technologies are all acceptable solutions to demonstrate the capabilities of the Upper 700 MHz A Block. Uniformity of technology across MEAs is not imperative, nor is it necessarily desired.

³ The Upper 700 MHz A Block was originally licensed by Major Economic Area “MEA”. Follow the hyperlink to explore each MEA on the FCC’s web site. Responders should ignore FCC population figures, as the figures we provide have proven to be more accurate and up to date.

⁴ Follow the hyperlink to find out more about each license at the FCC’s “Universal Licensing System (ULS)”.

⁵ Based on 2015 Census Department estimates. Includes areas not yet solid by BPC. Licensed areas that have already been sold by BPC are excluded from the figures.

Location/MEA	Call Sign	Population / POPs
Jacksonville	WPRR302	14,271,386
Tampa-St. Petersburg-Orlando	WPRR303	3,118,164
Miami	WPRR304	8,709,255
Cincinnati-Dayton	WPRR305	7,715,709
Columbus	WPRR306	4,024,289
Detroit	WPRR308	2,680,228
Cleveland	WPRR307	4,643,955
Chicago	WPRR310	14,245,393
Indianapolis	WPRR311	3,428,578
Knoxville	WPRR312	1,741,486
San Francisco-Oakland-San Jose	WPRR321	716,630 ⁶
Portland	WPRR322	485,668 ⁷
Seattle	WPRR323	5,405,219 ⁸
Hawaii	WPRR325	1,419,561
Guam and the Northern Mariana	WPRR326	218,481
Puerto Rico	WPRR327	3,650,064
American Samoa	WPRR328	54,259
Total		132,733,619

2.2 Upper 700 MHz A Block Spectrum Information

The Upper 700 MHz A Block Spectrum consists of 1 MHz Paired (2 MHz total) in the Upper 700 MHz band at 757-758 MHz and 787-788 MHz⁹. Service areas for Block A are based on Major Economic Areas (MEAs)¹⁰. The MEAs that are licensed to BPC are listed in 2.1. These licenses are covered by the FCC's part 27 rules¹¹. Maximum downlink power is 1000 Watts ERP at 1000 feet, and maximum uplink power is 30 Watts ERP. Maximum out of band emissions limits of 43 + 10log (P) dB apply to the

⁶ The San Francisco – Oakland – San Jose license area has been partially sold. The remaining POPs of the MEA that requires D-FAN coverage and utilization can be found by exploring the Location/MEA hyperlink of “San Francisco – Oakland – San Jose” in column 1.

⁷ The Portland license area has been partially sold. The remaining population of the MEA that requires D-FAN coverage and utilization can be found by exploring the Location/MEA hyperlink of “Portland” in column 1.

⁸ The Seattle license area has been partially sold. The remaining population of the MEA that requires D-Fan coverage and utilization can be found by exploring the Location/MEA hyperlink of “Seattle” in column 1.

⁹ Source: [CFR > Title 47 > Chapter I > Subchapter B > Part 27 > Subpart A > Section 27.5 b1](#)

¹⁰ Source: [CFR > Title 47 > Chapter I > Subchapter B > Part 27 > Subpart A > Section 27.6 a1 & a2](#)

¹¹ Source: [CFR > Title 47 > Chapter I > Subchapter B > Part 27 > Subpart G](#)

A Block and the adjacent 11 x 11 MHz Upper 700 MHz C Block. The A Block is similarly protected from interference from the adjacent public safety broadband channels at 758-768 MHz and 788-798 MHz. This band may be used in paired (Frequency Division Duplex "FDD"), unpaired (Time Division Duplex "TDD" or even broadcast (downlink only) systems.

2.3 Architecture

Select Spectrum expects the proposed architecture to include a limited number of tall tower/high power Pt-Multipoint base stations. For example, in an MEA like New York, it may be possible achieve to broad demonstration capability and majority percentage coverage of the population with a transmitter located on a single tower in or near New York City. Whereas in the Charlotte-Greensboro-Greenville MEA, multiple towers covering different cities will almost certainly be needed to achieve broad demonstration capability and greater than 50 percent coverage of the license coverage population. Coverage areas are not required to be contiguous – multiple separate coverage areas are fine if the total coverage meets or exceeds D-FAN coverage goals. For any proposers recommending a Land Mobile Radio "LMR" solution, a similar tall tower/high power transmitter may also be the most efficient way to cover the required area/population.

2.4 Operations

All operations should be consistent with FCC rules. The system performance should be favorable so as to impress potential buyers of equipment and spectrum licenses. For this demonstration project, Select Spectrum seeks a tall tower/high power operation to provide maximum economically efficient coverage area. This will allow demonstration over a wide area.

2.5 Multiple Solutions Possible

Select Spectrum and BPC reserve the right to contract to deploy different solutions in different MEAs. This approach will include the benefit of being able to demonstrate different technical solutions to customers. Responders should also indicate whether – in order to more effectively market their equipment or services to prospective buyers – they are willing to discount their prices significantly or provide equipment and services at no charge in one or two MEAs. Since Select Spectrum and BPC are dedicating/donating their time and spectrum to this demonstration network, we ask that other supplier participants also consider such

donations or discounts. BPC also intends to cover such ongoing operations costs as tower rental and wireline private or internet network access at the tower site.

2.6 RFI Deliverable Options

Responders may choose one or two options for their reply:

- 2.6.1 Responder may describe a complete project including Engineering, Furnish, Install, Test and Commission. "EFIT&C." Such a description should be divided into the specific steps identified in step 2.5.2 below followed by the supplemental steps to complete D-FAN and make it service-ready.
- 2.6.2 Responders may choose to respond with only a partial description including their ability to Design, Describe and provide the Estimated initial and ongoing Cost "DDEC" of the D-FAN.

Responses to 2.6.1 are generally thought to be appropriate for Manufacturers or System Integrator responders. Responses to 2.6.2 are generally thought to be appropriate for engineering companies, but any recipient may respond with an EFIT&C or DDEC reply or both.

2.7 Tentative RFI and D-FAN Schedule

Present – February 10, 2017: Responders review this RFI, and ask any related questions via email to Zachary Thompson zthompson@selectspectrum.com. Select Spectrum will respond to questions in a timely manner, and may also make relevant questions, but not the name of the questioner, available to other potential responders. Select Spectrum will provide its replies to questions to questioner and potentially to other parties as well. All questions will be answered by Select Spectrum by 2/15/17.

February 23, 2017: All Responders must submit their responses to this RFI by 2/23/17 at 11:00 PM EST.

February 24, 2017 – March, 17 2017: Select Spectrum may develop and issue an RFP or negotiate directly with potential providers.

April 14, 2017: Select Spectrum may require formal proposals as responses to an RFP or other form of solicitation.

April 30, 2017: Select Spectrum plans to notify tentative provider(s) of their selection to enter contract negotiation.

May 15, 2017: In concert with BPC, Select Spectrum plans to complete contract negotiations and award commitment.

June 15, 2017: The selected supplier should deliver their detailed technical plan

January 2, 2018 – December 15, 2018: Anticipated D-FAN Network Construction. The selected manufacturer / System integrator should furnish, install, test and commission the D-FAN.

January 2, 2019 and ongoing: As an option, responders may also describe their ability to provide operations support. Select Spectrum anticipates that the D FAN Networks in various cities will continue to operate to demonstrate the capabilities of the systems to prospective technology and equipment buyers and to provide ongoing services to a limited number of fixed sites in the extended area surrounding the base stations. For any LMR applications, the demonstration may be to mobile units (e.g. to utility vans or similar vehicles or potentially to handheld units in the area).

3.0 Requested Information

Select Spectrum is requesting information the following sections:

- 3.1 Describe a standard cost-effective solution to solve the problem of providing the satisfactory signal coverage levels in specified area identified by the responder. The specified area, which may include multiple cities inside the licensed area and need not be contiguous. Details of the actual solution may ultimately vary from MEA to MEA or even within a single MEA due to differences in topography, foliage, population distributions, state and federal regulations, etc.¹² For the RFI, responders should indicate their planned typical solution, and identify any known adjustments that may be required in atypical locations.

¹² Furthermore, due to the unique nature of the “demonstration” portion of D-FAN, different technologies are encouraged to meet the needs of each individual MEA. Moreover, Respondents are free to submit solutions for all MEAs as a general solution, MEAs on an individual basis, or only select MEAs that the Respondent is interested in.

- 3.2 Responders should indicate their proposed approximate charge for the first transmission site, and (if different) the proposed charge for additional sites. If one Responder proposes a solution that will meet the overall requirements for all the MEAs, that simpler unified solution may ultimately be chosen for all the MEAs. Alternatively, Select Spectrum and BPC reserve the right to contract to deploy different solutions in different MEAs. This approach would include the benefit of being able to demonstrate different technical solutions in different locations to prospective customers. Responders should also indicate whether – in order to more effectively market their equipment or services to prospective buyers – they are willing to discount their prices significantly or provide equipment and services at no charge in one or two MEAs. Since Select Spectrum and BPC will dedicate / donate time and spectrum to this demonstration network at no charge, we ask that other supplier participants also consider such donations or discounts. BPC also intends to cover such ongoing operations costs as tower rental and wireline private or internet network access at the tower site.
- 3.3 Provide a summary of the standard cost-effective solution per the following criteria:
- 3.3.1 An introduction of Responder goals and background experience
 - 3.3.2 Reasoning behind selection of solution
 - 3.3.3 A diagram showing the basic workings of the solution
 - 3.3.4 Potential timeline of construction/implementation, (will it fit into the RFI and D FAN Schedule outlined in 2.7?)
 - 3.3.5 The ability of the solution to continue to meet FCC rules and provides coverage of at least 50% of the population (POPs) or greater in each MEA for at least two years after January 13, 2019 or end of solution implementation, whichever comes later.
 - 3.3.6 Responder should describe their abilities and prior experience pertinent to their ability to implement the solution.

4.0 Responses

- 4.1 Interested parties are requested to respond to this RFI with a white paper or a non-binding informal and descriptive quote.
- 4.2 Responses should be presented in Microsoft Word for Office format and are due no later than February 23, 2017. Responses are encouraged to limit their responses to the minimum number of pages required to provide the requested information, but Select Spectrum understands that in some cases it may be easier and more efficient for Responders to include boilerplate language or product information that has not been specifically developed for the response to this RFI. All responses should be submitted via email only to zthompson@selectspectrum.com. Please limit any proprietary information to that which is important to communicate the key ideas or plan and clearly mark any proprietary information.
- 4.3 RFI Format
 - 4.3.1 Section 1 shall provide administrative information
 - 4.3.1.1 Name, mailing address, phone number, and email of point of contact
 - 4.3.1.2 Business Type and other relevant information
 - 4.3.2 Please provide requested RFI data as outlined in 3.0.

5.0 Questions

Questions regarding this announcement should be submitted in writing by email to Zachary Thompson zthompson@selectspectrum.com. BPC has asked that interested parties do not contact BPC. Telephonic questions should be followed up in email. Questions will be answered by Select Spectrum personnel according to their availability and schedule.

6.0 Confidentiality

Information present in Select Spectrum's RFI document, associated documents, and conversations over email and the telephone concerning the RFI are all to be treated as confidential in order to protect the interests of all parties involved. Furthermore, Select Spectrum will treat any RFI response as confidential, sharing them only with BPC and any other advisors engaged by Select Spectrum and BPC.

- 6.1 This agreement shall not be construed as creating, conveying, transferring, granting or conferring upon the Responder any rights, license or authority in the information exchange unless otherwise explicitly stated or implied by this agreement.
- 6.2 The Responder shall limit disclosure of the Confidential Information contained within this document to its own organization, directors, officers, partners, members, employees and/or independent contractors (collectively referred to as "affiliates") having a need to know. The Responder and affiliates will not disclose the confidential information obtained from the discloser unless required to do so by law.

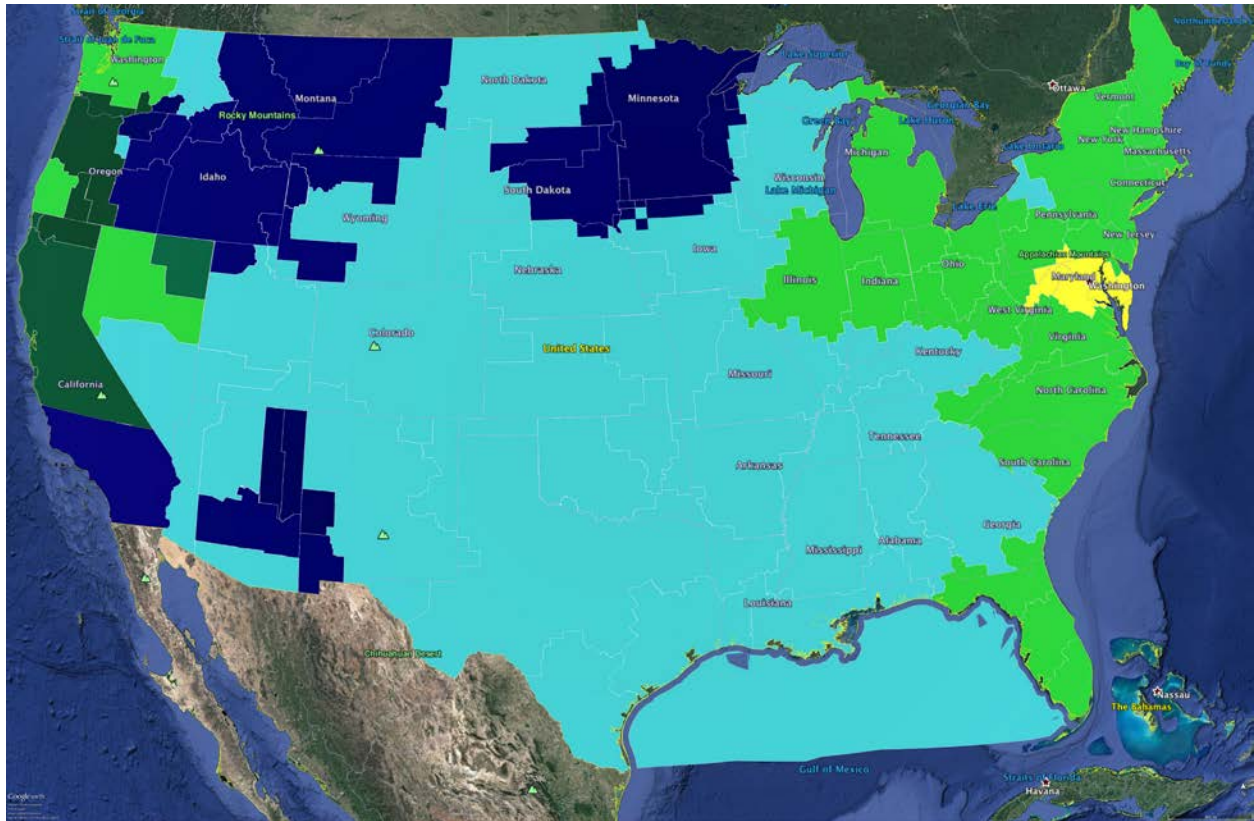
Attachment 1 - Disclaimers

The information provided in the RFI is confidential, subject to change and is not binding on Select Spectrum LLC or BPC. Neither BPC nor Select Spectrum has made a commitment to procure or contract for items discussed. Release of this RFI should not be interpreted as a commitment or as an authorization for any costs to be incurred upon which reimbursement would be required or sought after. If in the future, a non-selected Responder should ask Select Spectrum to delete and destroy the Responder's submission, Select Spectrum will use reasonable business efforts to do so.

Select Spectrum expects that BPC will contract to purchase and install equipment in some MEAs. BPC has already sold Upper 700 MHz A Block spectrum licenses to three utilities and to the California High Speed Rail Authority¹³. This RFI does not constitute a Request for Proposal (RFP) or a promise to issue one in the future. This RFI does not commit Select Spectrum or BPC to contract for any supply or service whatsoever. Moreover, Select Spectrum will not pay for any costs incurred responding to this RFI, but rather all costs will fall on the interested party. A decision by a recipient to not respond to this RFI will not preclude participation in a future RFP, if any is issued.

¹³ Select Spectrum and BPC expect to complete additional spectrum sales prior to June 13, 2019 when the current licenses are due for renewal, which is expected to reduce the MEAs eligible to participate in D-FAN.

Attachment 2 - License Locations Geographic Map



- Areas shown in light green on the above diagram are unsold BPC licenses.
- Areas shown in dark green have been sold by BPC to Portland General Electric, Idaho Power Corporation and California High Speed Rail.
- Areas shown in dark blue have been sold or leased by Access Spectrum.
- Areas shown in light blue are still available from Access Spectrum.
- Areas shown in yellow are available from Columbia Capital.

