

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

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OFFICE OF THE SECRETARY

In the Matter of)
)
Revision of the Commission's Rules to)
Ensure Compatibility with Enhanced 911)
Emergency Calling Systems)

CC Docket No. 94-102

To: Chief, Policy Division, Wireless Telecommunications Bureau

RESPONSE OF NEXTEL COMMUNICATIONS, INC.
AND NEXTEL PARTNERS, INC. TO ORDER
OF THE WIRELESS TELECOMMUNICATIONS BUREAU

Respectfully submitted,

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SUMMARY

Pursuant to the May 10, 2001 Order of the Wireless Telecommunications Bureau, Nextel Communications, Inc. and Nextel Partners, Inc. (collectively "Nextel") respectfully submit the information requested therein. This response documents the process by which Nextel arrived at its Phase II Enhanced 911 ("E911") technology choice reported to the Federal Communications Commission ("Commission") on November 9, 2000.

Beginning in Fourth Quarter 1998, soon after having completed the necessary network upgrades to provide Phase I E911 services, Nextel's Technology Development Group launched a multi-phase evaluation process to analyze, study, test and ultimately choose a location technology solution for deploying its Phase II E911 services. The first phase was initiated with a Request for Information ("RFI") that Nextel provided to 16 location technology vendors. Nextel received eleven responses, including one from Nextel's sole infrastructure and handset vendor Motorola, Inc. ("Motorola").

After reviewing and analyzing the eleven proposals, Nextel ultimately selected three technologies for a comprehensive field trial of their accuracy, reliability and availability – SnapTrack's Assisted Global Positioning System ("A-GPS") handset solution, US Wireless's RadioCamera™ network overlay and Motorola's Enhanced Observed Time Difference ("E-OTD") hybrid solution. Nextel's Second Quarter 2000 field trial encompassed both mobile

and stationary test calls in urban, suburban, rural, indoor and outdoor settings, and was conducted by independent third-party consultants. Knowing precisely where each test call was made was critical to assessing the relative accuracy of the location information provided by each vendor, thus independent consultants precisely calculated the latitude and longitude of each test call location prior to beginning the field trial. This latitude and longitude data provided the "ground truth" by which the location vendors' solutions were evaluated.

The results of the field trial, which are attached hereto, demonstrate that only A-GPS complied with the Commission's Phase II accuracy and reliability requirements. Thus, in its November 9, 2000 Report, Nextel informed the Commission it would deploy the A-GPS solution pursuant to a specific, detailed timeline for full compliance with the Commission's December 31, 2005 deadline requiring that 95% of a carrier's subscribers to have Phase II capable handsets.

Although Nextel and Motorola attempted to find an interim solution that could be deployed on October 1, 2001, pending A-GPS commercial deployment on October 1, 2002, the accuracy capabilities demonstrated using E-OTD on iDEN were not sufficient to warrant the minimum additional year delay an interim E-OTD deployment would create for A-GPS iDEN deployment. Since November 2000, Nextel has committed 100% of its location technology development efforts to the A-GPS solution, and

Motorola's developments efforts are well underway for integrating the A-GPS capability into the iDEN handset for initial commercial launch on October 1, 2002.

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**RESPONSE OF NEXTEL COMMUNICATIONS, INC.
AND NEXTEL PARTNERS, INC. TO ORDER
OF THE WIRELESS TELECOMMUNICATIONS BUREAU**

Pursuant to the May 10, 2001 Order of the Policy Division of the Wireless Telecommunications Bureau ("Bureau"),¹ Nextel Communications, Inc. and Nextel Partners, Inc. (collectively "Nextel") respectfully submit the information requested therein. This response documents and details the process by which Nextel arrived at its Phase II Enhanced 911 ("E911") technology choice reported to the Federal Communications Commission ("Commission") on November 9, 2000.²

¹ Order, DA 01-1187, released May 10, 2001.

² Nextel Communications, Inc. and Nextel Partners, Inc. Joint Report on Phase II Location Technology Implementation and Request for Waiver, submitted November 9, 2000 in CC Docket No. 94-102. Nextel did not provide this documentation in its November 9, 2000 report due to its confidential nature and to avoid publicizing its evaluation of technologies it did not select while those technologies were being considered by other carriers.

I. BACKGROUND

In November 1998, Nextel's Technology Development Group initiated a multi-step process to select a wireless location technology for meeting the Commission's Phase II E911 requirements. This process began with a request for information ("RFI") to sixteen potential location technology vendors.³ Eleven vendors responded, nine proposing a network-based solution and two proposing a handset-based solution. Nextel's Technology Development experts reviewed each of the RFI responses and selected four for continued evaluation and analysis: True Position, Inc. ("True Position"), US Wireless, Inc. ("US Wireless"), Grayson Wireless, a division of Allen Telecom ("Grayson" or "Allen"), and Motorola. Attached hereto at Exhibit A.1 is Nextel's RFI Summary Analysis, which compared and evaluated each of the eleven proposals to provide a basis for selecting those with the greatest promise of a Phase II solution suited to Nextel's iDEN technology and the operational characteristics and capabilities of its nationwide network.

In the second stage of the evaluation process, Nextel required each of the selected vendors to provide additional information documenting the current status and near term plans for development of an iDEN location

³ Motorola, Inc. ("Motorola"), Nextel's sole infrastructure and handset technology supplier, was not required by Nextel to participate in the RFI process. Rather, Motorola's location solutions were to be considered by Nextel, along with those provided in the RFI process. Nonetheless, Motorola provided a response to Nextel's RFI.

technology, a sample metropolitan and national deployment plan, and financial proposals. Near the completion of this stage in the Third Quarter 1999, True Position informed Nextel it would only pursue developing an iDEN location solution if Nextel would commit to (a) funding the development effort required for an iDEN solution, or (b) enter into a firm pre-development purchase agreement at a set per unit cost. Nextel found neither of these alternatives to be acceptable at that point in its evaluation of competing solutions and so informed True Position, thus ending its participation in the evaluation process. Nextel invited the remaining three vendors to participate in the third stage of the evaluation process, an independent field trial where each vendor would be required to deploy its solution within a Nextel-defined test area: US Wireless' RadioCamera™ network overlay system, Allen's Geometrix™ network overlay system and Motorola's hybrid Enhanced Observed Time Difference ("E-OTD").

Subsequently, however, Nextel's Technology Development team observed a demonstration of the SnapTrack Assisted Global Positioning System ("A-GPS") CDMA solution.⁴ Based on the accuracy demonstrated,

⁴ In March 1999, a group of Nextel's Technology Development representatives witnessed a demonstration in Tampa, Florida of the SnapTrack solution in a CDMA handset. Although the demonstration was not conducted on Nextel's behalf or with its participation, and no specific test results were provided to Nextel, the capabilities demonstrated were sufficiently accurate to warrant inclusion in Nextel's ongoing evaluation, despite Nextel's earlier decision not to pursue a GPS E911 Phase II solution based on the initial RFI evaluation. This investigation continued throughout 1999 and culminated in an invitation to participate in the Nextel technology

the growing body of technical information on A-GPS, and Motorola's assurance that an A-GPS solution could be successfully integrated into the iDEN handset and network infrastructure, Nextel added the SnapTrack A-GPS solution to the planned Second Quarter 2000 field trial. Additionally, during the First Quarter 2000, Grayson chose not to participate in the forthcoming trial.⁵ As Nextel explained in its January 22, 2001 Reply Comments in this proceeding,⁶ Grayson did not believe that it could be ready to participate in Nextel's trial and voluntarily withdrew.⁷ Consequently, the final line-up for Nextel's field trial included SnapTrack's A-GPS technology, US Wireless' RadioCamera™ network overlay system, and Motorola's hybrid E-OTD approach.

field trial. The SnapTrack solution witnessed and later tested by Nextel was not Qualcomm's gpsONE version. The gpsONE A-GPS solution was not available for testing at that time.

⁵ Having invested significant time, money and resources in evaluating the Grayson solution, including making network infrastructure changes necessary to facilitate Grayson's participation, Nextel was disappointed that Grayson chose to withdraw just prior to commencing Nextel's technology field trial.

⁶ Reply Comments, filed January 22, 2001, at pp. 4-7.

⁷ As further explained in Nextel's Reply Comments, Grayson – after having withdrawn from Nextel's technology field trial – showed Nextel its iDEN location solution on Grayson's Private Network in the Reston, VA area. Reply Comments at p. 6. This demonstration, however, was not an independent trial, did not evaluate the solution's capabilities based on its accuracy vis-à-vis "actual ground truth" nor did it test the solution under the same conditions and environments used in Nextel's field trial. Thus, Grayson's subsequent Reston demonstration was not an "apples-to-apples" comparison with the technologies evaluated in Nextel's field trial, nor did the

Due to the extensive preparations required to facilitate a live trial on the Nextel network, planning and coordination began in the Summer of 1999 for a Second Quarter 2000 field trial. Because Nextel planned to test two network overlay solutions (i.e., US Wireless and Grayson Wireless), it had to develop an automated process whereby the handset frequency and cell tower assignment information for each test call could be provided to the overlay location system's equipment.⁸ In addition, temporary networking equipment and additional high-speed data connections, not typically required in Nextel's normal operations, were installed at each cell site where location determination equipment was to be collocated.⁹

Beginning in Fourth Quarter 1999, Nextel sought proposals from independent third party consultants to conduct the trial, generate and gather the data, and analyze the data for a final report to Nextel's senior management. Nextel insisted that independent third parties -- rather than Nextel or any of the location technology vendors -- conduct the trial and analyze the data to eliminate the potential for bias in favor of or against any particular solution. Accordingly, TechnoCom Corporation ("TechnoCom"), a

demonstration provide a definitive basis upon which a significant technical decision could be made.

⁸ Providing this information to a network overlay provider is commonly referred to as "tipping." This information is an integral part of any network overlay location solution.

⁹ See Exhibits B.1 and B.2.

system engineering firm specializing in wireless system engineering and product development, was hired to develop the technology trial test plan and to analyze the test call data by comparing the location information collected to the specific latitude and longitude (i.e., "ground truth") of each predetermined test call location.

Nextel recognized that knowing precisely where each test call was made was critical to assessing the relative accuracy of the alternative Phase II solutions. To that end, Nextel employed an independent surveying company to survey indoor locations where commercially available differential GPS survey equipment would not suffice.¹⁰ For the remainder of the stationary locations (i.e., the outdoor test sites), survey grade differential GPS equipment was used to determine ground truth. In all cases, the accuracy of the ground truth coordinates established for each stationary test call location was established within 50 cm. In the case of mobile routes, the methodology used yielded accuracies to within five meters.¹¹

To further insulate the testing process from bias, Nextel separated the data collection and data analysis functions. KPMG LLP ("KPMG") was selected to supervise the data collection, *i.e.*, make and/or monitor the placement of phone calls from specified locations (both stationary and mobile). KPMG made a minimum of 30 phone calls at each of the 33

¹⁰ See Exhibit B.4.

¹¹ See Exhibit B.6 at Appendix A, p.1.

stationary locations over three days, varying the day of the week and the time of day. Multiple calls were made from each of the pre-defined mobile routes, depending on the length of the route and traffic conditions, but in each case no fewer than 30 calls were made from each route. The real-time location information collected as a result of the test calls was then provided to TechnoCom for analysis vis-à-vis the ground truth information.¹² Importantly, neither KPMG nor any of the location vendors were provided the ground truth information associated with each test call location.

Nextel spent a quarter-of-a-million dollars to develop the location trial software, implement the necessary infrastructure preparations, conduct the testing, and obtain an independent final report on which to base its Phase II technology decision.¹³ The test design provided an “apples-to-apples” comparison of the A-GPS solution, the US Wireless RadioCamera™ solution and the Motorola E-OTD solution. Based thereon, TechnoCom generated a Final Report, which is attached at Exhibit B.7 finding that the A-GPS solution

¹² In addition to TechnoCom’s analysis provided in the Final Report, Exhibit B.7, US Wireless post-processed the collected data, eliminating certain errors that occurred during the trial, and compared the collected location information to its best estimate of the “ground truth.” As indicated above, the surveyed “ground truth” was given only to TechnoCom to further preserve the independence of the analysis. US Wireless’ report is attached as Exhibit B.8.

¹³ Exhibit B.3. This cost estimate does not include the costs associated with Nextel personnel involved in the trial preparation, and it does not include the costs incurred by Motorola in developing, testing and installing the software patch to the Base Station Controller.

located the caller on average within 19.9 meters 67% of the time,¹⁴ the US Wireless RF fingerprinting solution located the caller on average within 567 meters 67% of the time,¹⁵ and Motorola's E-OTD solution located the caller on average within 545 meters 67% of the time.¹⁶ Based on this information, as more fully explained and documented in Nextel's responses below, Nextel chose as its Phase II solution the only location technology that complied with the Commission's accuracy and reliability requirements – A-GPS.

On November 9, 2000, Nextel submitted a Report on its location technology choice pursuant to the Commission's requirements in the Fourth Memorandum Opinion and Order ("Fourth MO&O").¹⁷ Therein, Nextel sought

¹⁴ Exhibit B.7 at Appendix A, p. 5.

¹⁵ *Id.* at Appendix C, p. 5. In an April 2, 2001 *ex parte* letter to Ms. Blaise Scinto of the Wireless Bureau, Nextel provided the Bureau with the "best-case" scenarios of each location technology it tested. As noted therein, when US Wireless post-processed its location data to eliminate all known anomalies and focused on the results from the suburban test environment (which is apparently best-suited to its technology), it achieved an average location accuracy of 120 meters 67% of the time. See Exhibit B.8; see also Exhibit B.7 at Appendix C, p. 5. Overall, as TechnoCom's report concluded, US Wireless' performance in the trial produced a location accuracy that was "well outside the [Commission's] requirement." See Exhibit B.7 at Appendix C, page 1.

¹⁶ Exhibit B.7 at Appendix B, p. 6. As explained in Appendix B to the TechnoCom Final Report, the E-OTD results were based on Motorola's post-processing of the data collected by KPMG. This post-processing was necessary due to the prototype nature of Motorola's E-OTD solution, which at the time was unable to generate real-time location information.

¹⁷ Fourth Memorandum Opinion and Order, CC Docket No. 94-102, FCC 99-326, released September 8, 2000. See also Public Notice, "Wireless

a waiver of the Commission's October 1, 2001 initial deployment deadline because, based on detailed discussions with its handset vendor Motorola, Nextel cannot deploy an A-GPS capable handset until October 1, 2002. Nextel's waiver request, as required by the Commission in the Fourth MO&O, is "specific, focused and limited" and provides "a clear path to full compliance" with the Commission's Phase II rules.¹⁸ It states what Nextel can do to meet the Phase II requirements rather than what Nextel cannot do, consistent with the Commission's guidance for seeking waivers of the E911 Phase II rules, by offering a set of milestones by which to measure Nextel's progress to compliance. Specifically, Nextel proposes to deploy its A-GPS handsets (which will provide location within 50 meters 67% of the time and within 150 meters 95% of the time) pursuant to the following milestones:

- (i) initial deployment October 1, 2002;
- (ii) 10% of all new handset sold beginning December 31, 2002;
- (iii) 50% of all new handsets sold beginning December 1, 2003;
- (iv) 100% of all new handsets sold beginning December 1, 2004;
and
- (v) 95% of Nextel's entire customer base will have Phase II capable handsets by December 31, 2005.

Nextel met with Bureau staff prior to the November 9, 2000 filing to explain the results of its technology trial and provide an overview of the

Telecommunications Bureau Provides Guidance on Carrier Reports on Implementation of Wireless E911 Phase II Automatic Location Identification," DA 00-2099, released September 14, 2000.

¹⁸ Fourth MO&O at para. 44.

technology decision Nextel would be making and the need for a waiver of the implementation deadline.¹⁹ After the November 9, 2000 filing, Nextel (and Motorola) again met with the Bureau to further explain Nextel's decision to use A-GPS, and provided detailed results of its technology trials and implementation realities.²⁰ Now, at the Bureau's request, Nextel is providing additional supporting information and documentation for its decision to deploy an A-GPS location solution that will be integrated into its iDEN handsets and network infrastructure and the technology realities that warrant waiver of the implementation deadlines. This information fully demonstrates Nextel's careful and thorough review of various location technologies, its commitment to making a timely decision to deploy a location technology that complies with the accuracy and reliability requirements of the Commission's rules and its ultimate Phase II deployment requirements, and to provide emergency location services that will best serve Nextel's customers and enable public safety providers to locate them to provide emergency services. Therefore, granting Nextel's waiver request will advance the public interest.

¹⁹ *Ex Parte* Notice of Nextel, submitted September 29, 2000 in CC Docket No. 94-102 by Laura L. Holloway.

²⁰ *Ex Parte* Notice of Motorola and Nextel, submitted March 12, 2001 in CC Docket No. 94-102 by Mary E. Brooner.

II. RESPONSE TO BUREAU INFORMATION REQUESTS

1. ***Provide a list of all tests and studies of E911 Phase II location technologies performed on your behalf or with your participation, including field-testing, beta testing, laboratory trials, consumer end-to-end testing, feasibility studies, and any other tests or studies conducted in order to determine whether certain E911 location technologies comply with FCC requirements.***
 - a. Tests and Studies Performed by Nextel or on Nextel's Behalf with Nextel's Cooperation and Participation.

As explained above, Nextel conducted essentially a three-part process to choose a location technology for its Phase II E911 solution. First, Nextel mailed out an RFI to sixteen potential providers, and analyzed their proposals in response to the RFI. Second, Nextel sought additional information from some of those vendors. Third, Nextel conducted an independent field trial of three technologies. Below is a chart listing each of the vendors Nextel considered, the type of analysis performed on each vendor's solution, the date of that analysis and whether other parties were involved. The final column of the chart provides a citation to the relevant documentation provided herein in response to Question 2 of the Bureau's Order, as set forth below.

VENDOR	TEST/STUDY PERFORMED	DATE	OTHER PARTIES	REFERENCED DOCUMENTATION
Cell-Loc	RFI Summary Analysis	1/99	None	Exhibit A.1
Corsair	RFI Summary Analysis	1/99	None	Exhibit A.1
KSI	RFI Summary Analysis	1/99	None	Exhibit A.1
LMS Comm.net	RFI Summary Analysis	1/99	None	Exhibit A.1

Allen Telecom/ Grayson	RFI Summary Analysis	1/99	None	Exhibit A.1
MicroTrax	RFI Summary Analysis	1/99	None	Exhibit A.1
Sigma One	RFI Summary Analysis	1/99	None	Exhibit A.1
SnapTrack A-GPS ²¹	RFI Summary Analysis	1/99	None	Exhibit A.1
	Field Trial	2Q 2000	KPMG, TechnoCom	Exhibit B.7

²¹ As noted above, although Nextel initially decided not to move forward with an evaluation of the A-GPS solution, this was in part due to the uncertainties in the Commission's Phase II rules and their application to handset technologies. Ultimately, Nextel tested the SnapTrack A-GPS solution in its Second Quarter 2000 trial on a CDMA system/handset because no A-GPS iDEN prototype existed. Thus, the trial of SnapTrack's A-GPS solution confirmed for Nextel that an A-GPS solution was the most accurate and reliable location technology of those Nextel tested. Since SnapTrack (subsequently acquired by Qualcomm, Inc.) does not provide iDEN handsets and infrastructure, Nextel then had to evaluate its iDEN vendor's ability to integrate the A-GPS solution into the iDEN platform. As evidenced in Nextel's November 9 filing, and subsequently in Motorola's Comments thereon, Motorola has committed to providing an iDEN A-GPS capable product.

True Position	RFI Summary Analysis	1/99	None	Exhibit A.1
Motorola E-OTD	RFI Summary Analysis	1/99	None	Exhibit A.1
	Field Trial	2Q 2000	KPMG, TechnoCom	Exhibit B.7
	Further Lab Simulations	3Q and 4Q 2000	Motorola	Exhibit C
US Wireless	RFI Summary Analysis	1/99	None	Exhibit A.1
	Field Trial	2Q 2000	KPMG, TechnoCom	Exhibit B.7 Exhibit B.8

b. Other Demonstrations Observed By Nextel and/or Discussions Between Nextel and Vendors.

In addition to the location technology solutions specifically analyzed, studied and/or tested by Nextel personnel at Nextel's direction or on Nextel's behalf, Nextel's Technology Development team spoke periodically with

location vendors about their solutions and whether they could effectively locate callers on Nextel's iDEN system. Additionally, in a few instances, Nextel personnel observed technology demonstrations such as the one Grayson Wireless performed in the Reston, Virginia area.²² These discussions and demonstrations, however, were not "performed on [Nextel's] behalf or with [Nextel's] participation" and they were not decisional in Nextel's final evaluation with the exception of SnapTrack's demonstration, as discussed above.

2. ***Provide documents reporting the results of all tests and studies, including those tests reflecting accuracy and reliability levels achieved in each test. Where possible, provide information describing the specific test locations, as well as the number of tests performed at each site.***

To ensure full disclosure of all documents and information reporting the results of Nextel's tests and studies, as well as the manner in which those studies and tests were performed, Nextel provides the following documents.

A. Nextel RFI Process (Exhibit A)

1. January 7, 1999 Wireless Location Technologies RFI – Summary Analysis. Document detailing the bases for Nextel's decision not to pursue several of the location solutions proposed by vendors responding to the Nextel RFI.²³

²² See *supra* at fn 7.

²³ In response to the Bureau's May 10 Order, Nextel sought waivers or releases from Non-Disclosure Agreements or Confidentiality Agreements it has or may have with some of the location vendors to the extent necessary to provide the information the Bureau seeks. Some vendors that are still negotiating similar transactions with other wireless carriers refused to waive

B. Nextel Field Trial (Exhibit B)

1. September 23, 1999 Motorola Solutions Sector "E911 Location Service Field Trial" Technical Requirements Document. Provides information regarding the system developments that were necessary to conduct the Second Quarter 2000 field trial.
2. Diagram depicting the system modifications necessary to create high-speed connections between Nextel's cell sites and Nextel headquarters for collecting the location data on Motorola's E-OTD solution and the network overlay solutions.
3. Summary sheet delineating the cost of Nextel's Second Quarter 2000 technology field trial.
4. Taylor Wiseman Taylor report on method used for surveying the indoor call location sites for Nextel's technology field trial.
5. Maps and photographs depicting the general location of the technology trial and the specific call locations used to test each location solution.
6. March 14, 2000 Test Plan for "Nextel's Location System Field Evaluation," TechnoCom Corporation. This document explains in great detail the test objectives, the testing requirements, actual test plan, including data gathering procedures, and an explanation of the measurements used in analyzing the data.
7. September 11, 2000 Final Report on "Nextel's Location System Field Evaluation," TechnoCom Corporation. This document provides the basis on which Nextel made its technology choice decision and resultant waiver request. The report defines the scope of the trial, and provides an overview of each of the

confidentiality of the pricing proposals they made to Nextel that are contained in this RFI summary analysis. As a result, given the short time Nextel had to obtain the releases, and rather than provide such information without an appropriate release, Nextel agreed with those vendors to redact the cost information in exchange for a release pertaining to all other information the Bureau has requested. If the Bureau believes that the cost information contained in Nextel's January 1999 RFI Summary Analysis is relevant to the proceeding at this juncture, Nextel will attempt to renegotiate a release with these eleven location services vendors.

tested technologies, an explanation of the testing methodology and a detailed analysis of each technology's performance in the trial.

8. July 16, 2000 US Wireless Report "Nextel RadioCamera™ Technology Trial: USWC Post-Processing Performance Analysis." This is the report US Wireless generated based on the data collected by KPMG.

3. Provide information on the current and expected availability of each location solution tested and the source of this information, including information regarding the availability of necessary components associated with each location technology.

As explained in the Background section above, Nextel spent nearly two years evaluating various Phase II E911 location technology solutions for its iDEN system. Since completing the technology trial in mid-2000 and making a technology choice decision in October 2000, Nextel has focused its location technology efforts solely on deploying an A-GPS solution as soon as possible. Pursuant to the deadlines established in Nextel's waiver request, both Nextel and Motorola have been deploying the resources necessary to reach Nextel's October 1, 2002 initial deadline for A-GPS handset commercial availability.²⁴ As the attached documents demonstrate,²⁵ the A-

²⁴ This requires not only that handsets be commercially available, but also that Nextel deploy the associated A-GPS network assist capabilities in its system infrastructure. Additionally, there are numerous actions needed to deliver Phase II information through the Local Exchange Carrier to Public Safety Answering Points ready to receive the information.

²⁵ See Exhibit D.

GPS chipset has been integrated into an iDEN handset prototype, and Motorola's development efforts continue apace.

In the months following Nextel's technology trial, Motorola continued its development and testing of the E-OTD solution in an attempt to improve its accuracy and reliability. As the documents attached at Exhibit C demonstrate, both Nextel and Motorola were committed to finding a compliant Phase II technology that could be deployed within the Commission's time frames. At a minimum, Nextel and Motorola hoped that, with accuracy improvements, E-OTD had the potential of providing a viable option for deployment as an interim Phase II solution prior to the commercial availability of A-GPS in October 2002.²⁶ The accuracy and reliability improvements that were achieved in the application of E-OTD to iDEN were not sufficient to warrant an interim deployment decision – particularly when considered in light of the minimum one-year delay such an interim

²⁶ As the memoranda attached at Exhibit C demonstrate, these continued efforts resulted in E-OTD location capabilities of, on average, 382 meters 67% of the time and 1327 meters 95% of the time. Or, if Nextel were to make additional infrastructure changes to improve the relative timing accuracy of the RF signals at cell site locations (through the addition of High Accuracy Measurement Receivers ("HAMRs")), the E-OTD solution could locate callers within 147 meters 67% of the time and 643 meters 95% of the time. These accuracy predictions were based on certain environmental assumptions and other limitations that could negatively impact the accuracy predictions. Moreover, the improved HAMR location capabilities could not have been available to Nextel until Second Quarter 2002 – only a few months before iDEN A-GPS will be commercially available.

deployment would have created in introducing the more accurate, Commission-compliant A-GPS solution to Nextel's customers.²⁷

Thus, subsequent to making its technology choice in late October 2000, Nextel stopped evaluating other potential location technology solutions. Nextel has no independent information on "the current and expected availability of each location solution tested. . ." Nextel's knowledge of "the current and expected availability" of each technology solution it tested is limited to the fact that none – other than A-GPS – demonstrated that it could fulfill the Commission's E911 Phase II accuracy requirements; accordingly, Nextel has not continued to investigate them. With respect to the A-GPS technology solution chosen by Nextel, its availability continues to be October 1, 2002.²⁸

Although Nextel has not actively investigated other location technologies since filing its November 9 Report, Nextel personnel have had informal discussions with locations technology vendors regarding their particular solutions. These meetings, however, do not constitute studies or tests of the potential use of these solutions for Nextel's Phase II E911 compliance. Various Nextel personnel speak at public conferences and

²⁷ See Comments of Motorola, submitted January 22, 2001, at pp. 5-8 for a discussion of the technological hurdles faced by E-OTD in an iDEN environment.

²⁸ *Id.* at p. 3 ("The first commercially available iDEN handset that incorporates A-GPS technology is expected to be available October 1, 2002.").

meetings on location services. At those events, discussions have occurred. Additionally, on occasion, Nextel receives unsolicited information from location vendors. For example, since the Bureau released its May 10, 2001 Order seeking the enclosed additional information, Nextel has received studies and test results from both US Wireless and Grayson. On May 14, 2001, US Wireless sent Nextel senior executives updated summary information on its most recent trial results.²⁹ On May 17, 2001, just two business days prior to the deadline for submitting the enclosed information, US Wireless followed up its summary information with its full trial report and analysis.³⁰ Similarly, Grayson Wireless provided Nextel just today (May 21, 2001) several documents on its asserted location capabilities, including a redacted version (to exclude financial information) of an October 24, 2000 proposal regarding its network overlay solution.³¹ None of these documents (except the October 24, 2000 proposal) were in the files of Nextel's Technology Development Group; accordingly, Nextel did not have the

²⁹ Exhibit E.1-E.3. This information was not decisional, having just been provided to Nextel last week. However, Nextel is providing it herein to demonstrate the amount of information provided to Nextel simply as a result of the Bureau's May 10, 2001 Order.

³⁰ *Id.*

³¹ In conversations with Grayson regarding the release of its confidential information, Grayson alleged that it previously had provided this documentation to Nextel, despite the fact that it is not contained in any files of Nextel's Technology Development Group. Because it was not contained in Nextel's Technology Development files, Nextel did not rely on it in making its technology choice decision and is not providing the additional information herein.

information, did not rely on it in submitting its November 9 technology report and has not included it herein.³²

The Commission's E911 Phase II rules wisely "drew a line in the sand" by requiring carriers to sufficiently investigate location technology alternatives and make a decision on the appropriate location technology for their particular wireless network by November 9, 2000. Pursuant to that deadline (originally set for October 2000), Nextel followed a regimented, time-sensitive evaluation process in which it researched and analyzed some eleven different location proposals. On November 9, 2000, Nextel committed to deploying the location solution that, in Nextel's trials, demonstrated its ability to fulfill the Commission's accuracy, reliability and ultimately handset penetration requirements – A-GPS. As events of the past week since the Bureau's Order requesting this information aptly demonstrate, without that deadline for making a technology choice, the lobbying of various location technology vendors and concomitant second-guessing of carrier analyses would continue *ad infinitum* as location vendors attempt to refine their location capabilities and flood carriers with that information.

³² At Exhibit F is Grayson's October 24, 2000 proposal, which was in the files of Nextel's Technology Development Group. The proposal did not provide a definitive basis for a Phase II location technology choice and was provided to Nextel just days prior to its November 9 reporting deadline; therefore, it was not decisional in Nextel's technology choice. Nextel is nonetheless providing at Exhibit F the redacted version Grayson provided Nextel today.

Nextel systematically reviewed the technologies it believed showed promise for an iDEN Phase II solution, followed the Commission's rules in making its technology decision by November 9, 2000, and subsequently has committed 100% of its technology development efforts to an A-GPS handset location solution for the iDEN system. The A-GPS solution provides public safety agencies precise location capabilities within the Commission's rules. The fact that some location vendors are claiming six months later that their solutions can locate callers within the Commission's requirements is irrelevant to Nextel's decision to deploy the one technology that demonstrated such capabilities in Nextel's field trial nearly a year ago. The Commission established a process for carriers to evaluate and commit to a location technology. Nextel complied with that mandate.

4. *Provide information on Nextel's publicly announced plans to change its air interface standards from iDEN to CDMA and how these changes will impact its E911 Phase II deployment.*

Despite recent confusion created by various press reports, Nextel has no plans to "change its air interface standards from iDEN to CDMA." Nextel intends to continue offering its iDEN product and service indefinitely. The November 9 waiver request and report address implementing A-GPS in Nextel's iDEN network and handsets to meet the Commission's Phase II E911 requirements for iDEN subscribers. As a result of these actions, Nextel's iDEN service will be Phase II compliant pursuant to Nextel's November 9 waiver request.

Nextel is in the process of evaluating various technologies for Third Generation ("3G") services, but has yet to make any technology decision. Nextel is talking with several potential 3G vendors offering CDMA derived 3G technologies. Any 3G technology that Nextel may choose to deploy will from its inception be E911 Phase II compliant in accordance with the Commission's rules.

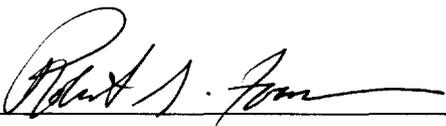
III. CONCLUSION

Pursuant to the Bureau's May 10, 2001 Order, Nextel has provided herein information regarding its evaluation, testing and ultimate technology decision supporting its November 9, 2000 report and waiver request. Nextel has fully demonstrated herein its commitment to deploying a location solution that provides Commission-compliant accuracy and reliability as soon as possible. Of those evaluated and tested by Nextel, only one potential solution – A-GPS – demonstrated the ability to fulfill the Commission's accuracy and reliability criteria. Therefore, as supported by the record

herein, Nextel is working with its vendor Motorola to deploy A-GPS capabilities in its iDEN handsets and network by October 1, 2002.

Respectfully submitted,

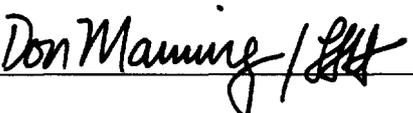
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Date: May 21, 2001