

Midwest Wireless Holdings L.L.C.
TTY Status Report
April 10, 2001

Background

Midwest Wireless provides TDMA digital cellular service throughout its licensed markets in Minnesota, Iowa, and Wisconsin. Midwest Wireless is a small rural carrier and highly dependent on its major infrastructure provider, Nortel networks, and its two primary handset providers, Nokia and Motorola, to meet the 12/31/01 software and equipment installation compliance deadline.

Status

Of the manufacturers listed above, only Nortel Networks has provided to Midwest information relative to their anticipated capabilities which is included in this filing. The company is proceeding on a path that assumes it will be able to meet the June 30, 2002 deployment deadline.

Respectfully submitted
Gary Christopherson
Midwest Wireless Holdings L.L.C.

MOTOROLA
TTY COMPATIBILITY DEVELOPMENT STATUS REPORT
1ST Quarter 2001

March 28, 2001

Via Electronic Mail and Federal Express
Ed Hall
The Alliance for Telecommunications Industry Solutions
1200 G Street, NW
Suite 500
Washington, DC 20005

Dear Mr. Hall:

Motorola is pleased to submit a status report related to our efforts at attaining TTY compatibility with our digital phones and infrastructure. Motorola is a domestic supplier of cellular handsets in TDMA, CDMA, GSM, and iDEN technologies. We also provide infrastructure equipment in CDMA and iDEN technologies.

We are working closely with our carrier customers to provide them with the equipment necessary to meet the Federal Communications Commission's June 30, 2002 TTY deployment deadline. At this time, we are on track to enable these carriers to meet their obligations.

The attached report is provided to the TTY Forum for its quarterly report to the Commission. Please contact me at the number below if you have any questions.

Regards

Alfred R. Lucas
Vice President and Director
Office of Access Excellence
Motorola
Voice: 561-739-2505
TTY: 561-730-2506

MOTOROLA
TTY COMPATIBILITY DEVELOPMENT STATUS REPORT
1ST Quarter 2001

| Product | On Target* | Status | Issues |
|---------------------|---|---------------|---|
| CDMA Handset | Yes | Development | |
| GSM Handset | Yes | Development | |
| IDEN Handset | Yes | Integration | |
| TDMA Handset | While beta plans are on target there is some uncertainty in the production schedule | Development | Reviewing issues with the Standard reported by Ericsson at TTY Forum 17 |
| CDMA Infrastructure | Yes | Integration | |
| IDEN Infrastructure | Yes | Integration | |

*On Target is defined as supplying carriers with product by 12/31/01 per FCC Fourth Report and Order,
 CC Docket No. 94-102.

Note: Motorola is working with its carrier customers and provides them with more specific information related to their respective products.

Al Lucas
 Office of Access Excellence
 Motorola
 Phone: 561-739-2505
 TTY: 561-739-2506

Nextel Communications, Inc.
2001 Edmund Halley Drive, Reston, VA 20191



March 27, 2001

Via Electronic Mail and Federal Express

Megan Hayes
The Alliance for Telecommunications Industry Solutions
1200 G Street, NW
Suite 500
Washington, D.C. 20005

Re: Nextel Communications, Inc. First Quarter 2001 Report to the TTY Forum

Dear Ms. Hayes:

Pursuant to the Fourth Report and Order of the Federal Communications Commission ("Commission") in CC Docket No. 94-102,⁴ Nextel Communications, Inc. ("Nextel") hereby submits this report on the status of its efforts to attain TTY accessibility on Nextel's iDEN handsets and network. Working closely with its vendor, Motorola, Inc. ("Motorola"), Nextel is pleased to report that its TTY accessibility progress is moving ahead in a timely manner. Pursuant to this schedule, Nextel intends to fulfill the Commission's June 30, 2002 TTY deployment deadline.

Nextel is a provider of digital Commercial Mobile Radio Services using Motorola's iDEN technology. Nextel is one of only three such iDEN providers in the United States. Thus, Nextel has worked with Motorola in the research and development of a TTY compatibility solution for the iDEN product and network. Since the Telecommunications Industry Association ("TIA") approved the Lucent solution for providing TTY accessibility on digital networks, Motorola has invested significant time and resources in creating a solution that will provide the same accessibility on iDEN networks.⁵ Specifically, Motorola has completed the requirements and design process, has implemented the TTY feature, and has begun lab testing of both the iDEN handset and iDEN network infrastructure.

With respect to handset deployment, Motorola has implemented the necessary changes in prototype handsets, and these currently are being tested in Motorola's labs. Once Motorola's testing is completed, Nextel can conduct "beta testing" of the handsets. The iDEN infrastructure

⁴ *In the Matter of Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Calling Systems*, Fourth Report and Order, CC Docket No. 94-102, FCC 00-436, released December 14, 2000 ("Fourth R&O").

⁵ See, e.g., Fourth R&O at para. 3.

process also is on schedule for full deployment by June 2002. As with the handset, the requirements and design process is complete and testing in Motorola's labs is underway. Following Motorola's testing of the infrastructure upgrades, Nextel can conduct "beta testing" of the TTY-capable handset and infrastructure in late third quarter 2001. Nextel plans to test its TTY-capable handsets and infrastructure with both the TTY community and Public Safety Answering Points. Motorola currently anticipates product delivery of the TTY infrastructure in fourth quarter 2001.

At that time, Nextel can initiate full deployment of the TTY upgrades throughout its nationwide network. As Nextel has previously explained, these modifications will impact the process for encoding the voice channel on iDEN's system. Because such vocoder modifications have the potential to impact voice quality for all Nextel users, these base station controller modifications will require considerable time and attention. At this time, Nextel anticipates completing deployment by the Commission's June 30, 2002 deadline.

Nextel appreciates the opportunity to provide this report to the TTY Forum as part of the forum's quarterly TTY report to the Commission. If you have any questions about this report, please do not hesitate to contact me at 703-433-8315.

Sincerely,

Robert D. Montgomery
Senior Manager – Regulatory Technology Development

NOKIA Americas Standards

Compiled by: Douglas W. Neeley

Reviewed by: NOKIA Government Affairs
Washington D.C.

March 14, 2001

Nokia Status Report to TTY Forum #17 – March 14, 2001

Nokia manufactures phones for virtually ALL wireless technologies; AMPS, TDMA, CDMA and GSM; at both 800 and 1900MHz. Nokia also supplies network terminals for GSM.

HARDWARE SOLUTIONS:

Nokia is planning on TTY Compatibility in eight new phone programs with 10 to 18 different specific models having CDMA, TDMA, GSM and AMPS capability in various combinations.

Interconnect Cable solutions (TIA/EIA TSB-121 compliant)

Nokia mobile handset products are currently planning to support TTY/TDD Compatibility plus three-pin headset functions. Several models will use the bottom system connector to convert the Tx and Rx audio signals from XEAR and XMIC to a standard 3 conductor 2.5mm jack. Other projects have a built-in 2.5mm jack four-conductor on the handset which will eliminate the need for an external adaptor. Nokia has formed a separate program team to implement the various interconnect cables as according to TIA/EIA TSB-121.

MOBILE TERMINAL SOFTWARE SOLUTIONS:

CDMA IS-127-2 (as of 3/4/2001) Six to eight base models

The implementation of the TTY feature within the mobile's memory allocation has just been completed. We are planning first round of testing with infrastructure in the next few weeks. Commercialization of the implementation will depend on the test results.

TDMA IS-136 / IS-823 (as of 3/12/2001) Five to seven base models

The TTY code is complete and we are waiting for integration with overall phone software.

GSM IS-?? (as of 3/8/2001) Multiple base models, including a European startup.

The TTY feature will be implemented. There is still some waiting for the Standards bodies to finalize these requirements.

Lab testing with infra planned in nn-nn weeks.

NETWORK SOFTWARE SOLUTIONS:

GSM IS-?? (as of 3/8/2001)

In 3GPP S2, there is an opinion difference of standardization methods. In T1P1, there is another opinion difference.

Some companies are pushing for the CTM Service Node in CN.

Other parties are asking to include a BSS transcoder-based CTM solution as part of the 3GPP architecture for Release 4.

TTY feature is being implemented. Lab testing with infra will start when the final location for the code to reside is decided.

TTY Overall Time Plan

| PROGRAM/TASK | 2001 | | | | | | | | | 2002 | | | | | |
|---|------|------------|-----|-----|-----|----------|-----|-----|-----|------|-----|-----|-----|-----|-----|
| | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun |
| <u>TSB-121</u> <u>CABLES</u> HAD-8/DCT-3 DCT-4 | Pre | P-2 Pre | | | | - P-3 | | | | | | | | | |
| <u>CDMA</u> Test with Carrier X Test with Carrier Y | C1 | | | | | | | | | | | | | | |
| <u>TDMA</u> Test with Carrier X Test with Carrier Y | | | | | | | | | | | | | | | |
| <u>CDMA – 1900MHZ</u> Test with Carrier X Test with Carrier Y | | | | | | | | | | | | | | | |
| <u>TDMA – 1900MHZ</u> Test with Carrier X Test with Carrier Y | | | | | | | | | | | | | | | |
| <u>GSM</u> Test with Carrier X Test with Carrier Y | | | | | | | | | | | | | | | |
| <u>GSM Network</u> Test with Phone Model Test with Carrier Y | | | | | | | | | | | | | | | |

CODE:

Pre Pre-production models
 P-2 Full Production Line DCT-3
 P-3 Full Production Line DCT-4

C1: CDMA Lab Testing with Infra-structure

Respectfully Submitted By:
 Douglas W. Neeley
 Sr. Technical Standards Eng.
 972-894-4874
 doug.neeley@nokia.com

Leo Fitzsimon
 Government Affairs
 (202) 887-0145

NORTEL

INFORMATION SUPPLIED TO CUSTOMER'S BASED UPON AIR INTERFACE TECHNOLOGY USED.

RESPONSE TO CUSTOMER

April 11th 2001

Dear (Customer's Name),

Enclosed is information regarding Nortel Networks' plans to comply with FCC TTY requirements, in response to raised questions.

- Network infrastructure software/hardware development and testing
Nortel response: Nortel Networks' development is complete, and product test has been completed as well. Nortel has tested with Qualcomm prototypes (note other handset vendors were not available during Nortel's NBSS10.1 test cycle).
- Network infrastructure software/hardware planned general availability date
Nortel response: In order to comply with the FCC's December 31, 2001 requirement for TTY/TDD, Nortel will be committing to deploying the enabling software as part of the MTX10 load only. MTX10 is scheduled for General Availability Week 44, 2001. The order code for CDMA TTY/TDD is A0862455. Nortel Networks CDMA TTY solution does not require any new hardware besides what is currently available (ESEL cards - 13K, EVRC and SEL cards - 13K). The network provisioning for TTY must be done the same way as for the voice subscribers.
- Schedule for deployment of the software/hardware in the (Customer Name) switches
Nortel response: The minimum baseline software requirement for this feature to be deployed in (Customer Name) switches is MTX09 or higher. On the BSCs, the baseline requirement is NBSS 10.1 or higher. Software is scheduled to be available Week 44 and will be scheduled for deployment on specific (Customer Name) switches on a market-by-market basis.
- Nortel Network's plans to test and confirm solution performance including additional tests referenced in Sections 20-23 of the order during the six-month extension allowed for this purpose in the order, January 1 through June 30, 2002.

Nortel response: Regarding Section 20-23

Turbocode/ HiSpeed is a proprietary feature on Ultratec/Ameriphone TTY device and is not supported by CDMA standards. If CDMA standards are enhanced to support these devices, Nortel will support this in a future release. However, standards are designed to avoid supporting propriety methods and there is no known effort to standardize the propriety features.

Background: At the TTY Forum #16, Ultratec identified a unique problem their equipment users may have had calling 911 using their advanced proprietary protocol.

Ameriphone also uses an advanced proprietary protocol. While the FCC directive and the Mission of the TTY Forum was only to provide a solution for a Baudot message to 911, a committee from Forum #16 was formed to explore the feasibility of solutions for proprietary systems.

At the TTY Forum #17, March 14, 2001, the committee reported that

- ◆ Proprietary protocol manufacturers would advise their customers how to avoid problems with a digital wireless TTY/911 call
- ◆ Solution development should continue focus on providing solutions for Baudot TTY messages
- ◆ The Committee be dissolved

The proposals were adopted at the TTY Forum #17.

- Plans to test your own or other vendor CDMA handsets with your switch solution
Nortel response: Even though the infrastructure software is scheduled well in advance of the Dec 31, 2001 FCC requirement, commercial handset general availability dates have not been scheduled by handset vendors. Nortel Networks recommends (Customer Name) engage its handset vendors for a thorough response to the FCC.

Nortel Networks understands that it is most challenging for handset manufacturers to design CDMA TTY/911 solutions into handsets and have commercial availability by the FCC December 31, 2001 date, especially with "improved" code being suggested on a frequent basis. Nortel Networks is not surprised that, despite diligent work, firm handset availability dates were not generally available at the March 14, 2001 TTY #17 Forum. Nortel Networks believes that for CDMA solutions, the standard and any improvements should be locked down in order for all vendors to design to a common standard and common code set.

- Plans to work with any wireless carrier to perform end to end customer tests
Nortel response: Nortel recommends (Customer Name) engage the chosen CDMA TTY handset vendor during network testing to do interoperability testing with the Nortel Networks solution.

- Plans to test with the Public Safety Community (PSAPs).
Nortel response: Nortel recommends (Customer Name) schedule this testing with the PSAP centers during its network testing. Nortel Networks will work with (Customer Name) to identify PSAPs that would be willing to test an end-to-end solution. Additionally, it is recommended that 711 functionality be tested with Telecommunications Relay Service Centers (TRS's); the 711 service requirement is also mandated by the FCC.

Beyond the questions already responded to, we would like to address the issue raised at the TTY Forum #17 relating to echo cancellers and voice quality. Nortel Networks lab testing to date has not identified an echo canceller problem with Nortel Networks' equipment and software. Nortel Networks is aware that some other manufacturers have identified that the echo canceller issue has created a performance problem with their TTY/911 solutions. Nortel Networks will continue

to carefully review further results for any echo canceller problem in future testing, but we do not anticipate a problem with our solution at this time.

In conclusion, please note that the TTY Forum #17 Draft Report is available. This report includes information summarizing the activities and discussions that took place at the most recent forum. Should (Customer Name) require access to this report, please contact ATIS (Alliance for Telecommunications Industry Solutions) via Ed Hall (202) 628-6380 or Megan Hayes (202) 662 8653.

Regards.

Nortel Networks

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Regards,
 Nortel Networks

Pine Belt Cellular, Inc.
3984 County Road 32
P. O. Box 279
Arlington, Alabama 36722

TTY Report – April 12, 2001

Pine Belt Cellular, Inc. is completely reliant upon its vendors to implement the TTY solutions in its handsets and network. Pine Belt does not have the ability to independently verify the release dates of the solutions that will be provided by the vendors.

Network infrastructure software development:

Lucent Technologies, our switch and infrastructure manufacturer is aware of the TTY requirements. Our understanding is that Lucent is currently working on software solutions at this time. Pine Belt is dependent upon Lucent providing these solutions.

Handset development and testing plans:

Pine Belt Cellular uses handsets made by a number of manufacturers. The manufacturers most predominantly used by Pine Belt are Motorola, Nokia, and Kyocera. Pine Belt will stay abreast of the developments by these manufacturers so when TTY solutions are made available, we will be able to provide these units to our customers as soon as possible.

Beta testing and lab testing:

Pine Belt Cellular will begin testing TTY compatible equipment as soon as both our handset and infrastructure manufacturers provide solutions to us.

Release and general availability to carriers of network infrastructure software

Pine Belt Cellular is awaiting updated reports of software availability from switching and infrastructure vendors.

Availability to carriers of full acceptance test units:

Pine Belt Cellular is awaiting software and hardware availability from switching, infrastructure, and handset vendors.

Efforts toward achieving digital wireless solution compatibility with enhanced TTY devices:

Pine Belt Cellular remains dependent upon the availability of vendor provided solutions to meet the FCC's tentatively mandated timeline (12-31-01) to provide E911 TTY access to our networks.

Carrier coordination of testing with PSAP:

This testing target date is dependent upon solutions provided by network infrastructure vendors and handset vendors.

Carrier testing activities, including field testing, consumer end-to-end testing, and other necessary tests:

Testing will begin immediately upon receipt of software and hardware. Pine Belt Cellular is dependent upon network infrastructure vendor solutions.

Retail availability of necessary consumer equipment:

Pine Belt Cellular is dependent upon the availability of handsets from vendors. No firm commitment has been received at this time from handset vendors.

Geographic scope of network infrastructure deployment:

Pine Belt Cellular service area: Alabama RSA3B2 & BTA415

SpectraCom, Inc. d.b.a PYXIS Communications
TTY Report
Thursday, April 12, 2001

PYXIS Communications uses CDMA technology to provide digital wireless service in all of our markets. PYXIS Communications is completely reliant upon its vendors to implement the TTY solution in its handsets and network.

Infrastructure Vendor Status

Nortel is PYXIS' infrastructure provider. Their response is as follows:

Nortel Network Solution Set

The Nortel Network software solution is in release MTX-10, scheduled for general availability week 44, 2001.

Development and Testing

Lab testing has not identified problems – in house testing has been done with one handset. Lack of availability of CDMA test handsets prevented testing of a wider range of subscriber apparatus.

Product Time Line

MTX-10, scheduled for general availability week 44, 2001, supporting code for the IS-127-2 & IS-733-1 standards, and at least one function of the code relating to the future IS-127-3 & IS-733-2 standards.

Issues and Concerns

- The changes to CDMA TTY/911 code, and the coming standard change has created much difficulty to design solutions to a “moving target”.
- The FCC's date for carriers to acquire TTY/911 equipment is December 31, 2001; a standard change is expected in April 2001. There is not sufficient time between April and December to fully evaluate all changes, and incorporate all proposed changes in software that customers will have in December
- Some proposed changes are more important than others. Manufacturers can incorporate important changes without incorporating all. It is not known how different equipment using different mixes of equipment will interoperate
- Nortel Networks believes standards must be “locked down” for equipment developers to design to a common target for initial equipment deployment. Future changes in initial equipment standards should provide time developing a stable and fixed second round design target
- Industry solutions only support Baudette 45.5 TTY transmissions, propriety TTY transmissions, and European Baudot 50 is not supported.
- Ericsson has filed a Report Number 47 with ATIS that identifies a test failure where the Voice Recognition function is incompatible with the existing TTY Detector. It is not clear if the recent Lucent code change will cure this problem, or if the problem applies to Nortel Network equipment and software.

Handset Vendor Status

KYOCERA Response:

Kyocera Wireless Corporation (KWC) is in the process of developing the TTY feature. KWC is planning to have completed the development in order for this feature to become available on commercial handset offerings in 1H2002 to meet the implementation deadline established by the FCC.

In order to meet the deadline KWC is planning to develop TTY feature support in an existing, approved, handset platform that can be used for testing. In that regard the feature can be tested and modified as necessary using a process external to our commercial product development schedules and processes.

At this time some preliminary development has commenced, but has been limited to producing feature support in the User Interface of our handsets. With respect to standards, we are also coordinating and tracking the development of the latest code changes being implemented in Qualcomm ASICs. Our understanding is these changes support Lucent's recommendations (changes to the IS-733-1 and IS-127-2 standards) proposed at the end of last year.

We have also been coordinating with the infrastructure manufacturers Lucent Technologies, Nortel-networks, and Motorola CIG with respect to their schedules and plans for feature completeness of their infrastructure. These tests will be coordinated with infra-development labs, Interoperability labs, or carrier network, depending upon availability and timing. From our communications with the infrastructure manufacturers, our understanding is that by 4Qtr2001 carriers should also have the ability to test this feature in their network. It is our intention to have the feature development process matured to the extent it could be tested on a network in that time frame.

In support of the testing we are planning, KWC has procured TTY devices manufactured by Ultratec and Ameriphone. Our understanding is these are the most widely utilized devices in the industry therefore it is our intention to limit end to end customer testing to these devices.

Motorola response:

No update/response has been received from Motorola.

Qwest Wireless, LLC
1860 Lincoln Street
14th Floor
Denver, Colorado 80295

March 14, 2001-03-06

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of

Revision of the Commission's Rules
To Ensure Compatibility with
Enhanced 911 Emergency Calling Systems

CC Docket No. 94-102

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Report of Qwest Wireless, LLC, to be filed through TTY Forum

Pursuant to the FCC's Fourth Report and Order, dated December 14, 2000, in the CC Docket referred to above, Qwest Wireless, LLC ("Qwest") hereby submits its first report to the TTY Forum for compilation and timely filing with the FCC.

1. Network Infrastructure Software Development

In connection with E911 compliance efforts, Qwest recently sent a questionnaire to software vendors and received responses with anticipated software release dates.

2. Handset Development and Testing Plans

Qwest is talking with its vendors. No testing has been scheduled, as it is too early in the process.

3. Beta Testing and Lab Testing'

No beta testing has been scheduled, as it is too early in the process.

4. Release and General Availability to Carriers of Network Infrastructure Software

Vendor 1: tentative release March 31, 2001

Vendor 2: expects release November 5, 2001

5. ***Availability to Carriers of Full Acceptance Test Units***

Qwest has identified one vendor developing a K1 handset that will have a TTY connection. This is the handset that Qwest will need for E-911 P2. Qwest expects to test these units.

6. ***Efforts Towards Achieving Digital Wireless Solution Compatibility with enhanced TTY Devices***

In June of 2000, Qwest sent a Request for Information to its network and handset vendors to gauge the availability of network and handset technology compatible with TTY devices. The responses Qwest received at that time showed no significant progress in the development of TTY compatibility. Qwest intends to send another RFI to its vendors in March or April of this year to determine the status of handset compatibility with TTY devices.

In connection with E911 compliance efforts, Qwest recently sent a questionnaire to software vendors and received responses with anticipated software release dates.

Qwest has organized into a task force consisting of representatives of all its internal departments that are affected by the TTY 911 mandate. The sole purpose of the task force is to search for solutions of the TTY 911 requirement.

7. ***Carrier Coordination of Testing with PSAPS***

Qwest expects this to be accomplished after E99 P2 will be turned up. Timing is undetermined as no P2 requests have been received at this time..

8. ***Carrier Testing Activities***

There are no testing activities scheduled as it is too early in the process.

9. ***Retail Availability of Necessary Consumer Equipment***

Qwest has identified one vendor developing a K1 handset that will have a TTY connection. This is the handset that Qwest will need for E-911 P2. Qwest expects to test these units.

10. ***Geographic Scope of Network Infrastructure Deployment***

The geographic scope will depend on the vendor's offerings.

Floy H. Jeffares, Government Affairs Manager

Siemens TTY Report March 28, 2001

Siemens is investing a significant amount of effort in order to comply with the FCC requirement to support E911 calls made from TTY devices on wireless digital networks. The status provided below is based on the currently available TTY/CTM standards and assumes no changes to these standards.

Network Implementation

Siemens is developing a TRAU based TTY solution for GSM networks. This solution is in line with the consensus reached in January this year, at a meeting held in Puerto Vallarta between the US GSM operators and the major infrastructure vendors. The Siemens solution will not impact the existing vocoders already deployed and supported by Siemens.

Siemens expects the first prototype units (including the necessary hardware and software) to be made available to wireless operators for testing at the end of 2001. This will allow sufficient time for the network integration testing required to meet the in service date of June 2002.

Handsets Implementation

Siemens Handset group plans to support TTY in 2002. This product is currently in the planning phase and availability of beta units for testing as well as general availability dates will be published at a later date.

Respectfully submitted,
Ilan Vardi
Siemens

Southern LINC.



Southern LINC TTY Status Report 1st Quarter 2001

Southern LINC continues to pursue compliance with the FCC's TTY requirements. It is working closely with its sole vendor, Motorola, to ensure that it meets the FCC's deadline of June 30, 2002. Based upon the information it has received from Motorola, Southern LINC is currently of the belief that it will be able to deploy TTY capability to its customers by June 30, 2002. As its plans for testing and deployment emerge, based upon equipment availability, Southern LINC will be pleased to share that information with the Commission in a future report.

Sprint PCS Report to the FCC

Provided by Cheryl Gentry

3/27/01

1. Network Infrastructure Software Development

- Lack of availability of bug-free software has delayed our ability to begin interoperability testing. This is resulting in a significant delay in our initial rollout projections. In our previous report we stated that we expected software delivery from our vendors first and second quarter this year.
- Two of our infrastructure vendors have provided software to our labs; however, several significant bugs have been identified, inhibiting our ability to begin lab and field testing in the planned time frames. (Specifically, we are concerned with the time it will take for network vendors to add the bug fixes in Lucent's changes to the standard).
- The other two infrastructure vendors have committed to providing software to our labs by late summer or early fall.
- We are looking to the FCC to hold infrastructure software manufacturers accountable if we are going to be held to the drop-dead date of 6/02.

2. Handset development and testing plans

- TTY compatibility is dependent on Qualcomm's commercial release of their DMSS software (reference software integrated into their handset) - scheduled for late April 2001, at the earliest.
- Following that release, handset manufacturers need to build user interface (software).
- Interoperability testing w/ infrastructure will follow - both at SPCS and in infrastructure labs.
- We are dependent on handset vendors to provide TTY capable handsets prior to field-testing.
- SPCS is anxious for the report from the TTY sub-committee regarding the solution to impedance issues related to the audio interface through the 2.5-mm jack.
- We are looking to the FCC to hold handset manufacturers accountable if we are going to be held to the drop-dead date of 6/02.

3. Beta testing and lab testing

- SPCS requires both lab- and field-testing prior to implementation.
- Our internal lab-testing and field-testing are extremely intensive and require approximately two to three months each.
- We had planned to begin FMA testing in May or June, now we are looking at late summer or early fall, which may be optimistic.
- We are planning to test with consumers in various markets prior to nation-wide deployment.

4. Release and general availability to carriers of network software

- We continue to experience frustration with the inability to obtain bug-free software in order to begin interoperability testing.

5. Availability to carriers of full acceptance units

- See # 2

6. Efforts toward Achieving digital wireless solution compatibility with enhanced TTY devices.

- In regards to any requirement to support enhanced protocols - We emphasize that this is beyond our technical capability for this launch, a requirement to do so would take an additional 2 years of development.
- 7. Carrier Coordination with testing with PSAP**
- PSAP testing will be conducted at the time of Beta trials.
- 8. Carrier testing activities, including field testing, consumer end-to-end testing**
- As stated previously, SPCS requires both lab and field-testing prior to implementation.
 - The internal lab-testing and field-testing processes are intensive, requiring approximately two to three months each.
 - As a result, FMA testing has been delayed until at least late summer, or early fall.
- 9. Retail availability of necessary consumer equipment**
- TTY capable handset sales are projected for first quarter, 2002.
- 10. Geographic scope of network deployment**
- SPCS plans to launch in specific markets in 2002, with nation-wide launch completed by June 2002.

US Cellular TTY Forum 17 Quarterly Report

1. *Network infrastructure software development*
US Cellular is relying on its infrastructure vendors to complete software development.
2. *Handset and development and testing plans*
US Cellular is relying on the handset vendors for the development of any product. When available product is available, US Cellular will perform field testing in accordance with the Loeber and Walsh test plan, previously submitted in the TTY Forum.
3. *Beta testing and lab testing*
US Cellular is only able to field-test beta units. Testing of beta units will only take place after the final release of the infrastructure is in place. Presently, there are no beta units available.
4. *Release and general availability to carriers of network software*
US Cellular has been assured by its infrastructure vendors, Lucent and Nortel, that the software releases to support the "TTY Solution" will be in place by December 2001.
5. *Availability to carriers of full acceptance test units*
US Cellular is awaiting a firm commitment from its handset suppliers for the availability of full acceptance test units..
6. *Efforts towards achieving digital wireless solution compatibility with enhanced TTY devices.*
US Cellular will work with the various manufacturers to achieve a standard to transport enhanced TTY devices (proprietary faster turbo codes).
7. *Carrier coordination of testing with PSAP*
US Cellular will conduct TTY testing with larger PSAPs in its coverage area and with any PSAP that requests testing. No requests have been received. Scheduling of these tests will commence after acceptable handsets and infrastructure equipment is in place.
8. *Carrier testing activities, including field testing, consumer end-to-end testing*
Scheduling of consumer end-to-end testing will commence after acceptable handsets and infrastructure equipment is in place.
9. *Retail availability of necessary consumer equipment*
There are no available TDMA and CDMA handsets available that will pass TTY baudot tones. There are no firm schedules from our handset suppliers for the availability of production units. Retail availability is uncertain at this time.
10. *Geographic scope of network deployment*
US Cellular is planning on having the "Network" portion of the TTY solution installed in all our CDMA and TDMA markets throughout the country. Availability of acceptable handsets will determine when the TTY solution is turned on for commercial use. US Cellular will not deploy a marginal and/or an unacceptable solution.



TTY Report for March 2001