# AVAYA

# EC500 Extension to Cellular

Release 4
Installation and Administration Guide

**Part 15: Personal Computer Statement.** This equipment has been certified to comply with the limits for a Class B computing device, pursuant to Subpart J of Part 15 of FCC Rules. Only peripherals (computing input/output devices, terminals, printers, etc.) certified to comply with the Class B limits may be attached to this computer. Operation with non-certified peripherals is likely to result in interference to radio and television reception.

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- Answered by the attendant
- Routed to a recorded announcement that can be administered by the CPE user

This equipment returns answer-supervision signals on all DID calls forwarded back to the public switched telephone network. Permissible exceptions are:
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EMC Directive          89/336/EEC
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**Acknowledgment**

This document was prepared by Avaya Inc., Denver, CO.

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# About This Document

## Purpose

This guide describes the installation, administration, maintenance, and troubleshooting tasks necessary to install and set up Release 4 of Avaya™ EC500 Extension to Cellular.

## Intended Audiences

Audiences for this guide include System Administrators, Software Specialists, and Avaya technical personnel.

## Reason for Reissue

This guide has been reissued to provide information for Release 4 of the EC500 solution of the DEFINITY® or Avaya Communications Server running MultiVantage™ software.

## How to Use This Document

The document is organized as follows:

Chapter 1, "Overview of EC500 Extension to Cellular" - Provides an overview of features, capacity considerations, hardware/software requirements and security.

Chapter 2, "Installation and Planning" - Provides information on installation of EC500, as well as planning tasks to be performed before EC500 XMOBILE station extensions are administered.

Chapter 3, "Administration" - Provides detailed instructions on administering XMOBILE stations for EC500 implementation.

Chapter 4, "Installation and Administration Test" - Provides basic test procedures for the EC500 installation.

Chapter 5, "Maintenance" - Provides details on EC500 maintenance considerations as well as the busy out and release capabilities for XMOBILE stations.

Chapter 6, "Troubleshooting" - Provides errors conditions, causes, and resolutions that may occur with EC500 operation.

Appendix A, "Avaya EC500 - Other Configurations" - Other Configurations - Provides details on EC500 Stand-Alone and Multiple Bridge Mode configurations.

Appendix B, "Upgrades from Prior Releases"- Provides an overview of how to upgrade from Release 1, Release 2, and Release 3.

# Conventions Used

This guide uses the following textual, symbolic, and typographic conventions to help you interpret information.

## Symbolic Conventions

> **NOTE:** This symbol precedes additional information about a topic. This information is not required to run your system.

## Typographic Conventions

This guide uses the following typographic conventions:

| | |
|---|---|
| `command` | Words printed in this type are commands that you enter into your system. |
| *device* | Words printed in this type indicate parameters associated with a command for which you must substitute the appropriate value. For example, when entering the `mount` command, *device* must be replaced with the name of the drive that contains the installation disk. |
| **File**, **OK** | Words in bold refer to items on menus and screens that you select to perform a task. |
| *italics* | Italic type indicates a document that contains additional information about a topic. |
| underlined text | Text in underlined type indicates a section within this document that contains additional information about a topic. |
| **Enter** | Words in bold represent a single key that should be pressed. These include **Ctrl**, **Enter**, **Esc**, **Insert**, and **Delete**. |

## Related Documentation/Training

Related documentation:

*Avaya EC500 Extension to Cellular Release 3 User Guide,* Issue 2, December 2001 (Doc Number 210-100-700, Comcode 700211196)

*Avaya EC500 Extension to Cellular Release 2 User Guide,* Issue 1, July 2001 (Doc Number 210-100-700)

*Avaya EC500 Extension to Cellular Installation and Administration Guide Release 3,* Issue 3, January 2002 (Doc Number 210-100-500)

*Avaya EC500 Extension to Cellular Installation and Administration Guide Release 2,* Issue 2, July 2001 (Doc Number 210-100-500)

*Avaya EC500 Extension to Cellular Installation/Administration Guide Release 1,* Issue 1, February 8, 2001 (Doc Number 210-100-500)

*Avaya EC500 Extension to Cellular Troubleshooting Guide Release 3,* Issue 3, January 2002 (Doc Number 210-100-102)

*Avaya EC500 Extension to Cellular Troubleshooting Guide Release 2,* Issue 2, July 2001(Doc Number 210-100-101)

*Avaya Administrator's Guide for Avaya MultiVantage$^{TM}$ Software,* Issue 4, May 2002 (Doc Number 555-233-506)

*Unified Messenger® Telephone User Interface Online Guide,* accessed via http://support.avaya.com

Online documentation for EC500 and Unified Messenger is provided at the following URLs:

http://support.avaya.com

http://support.avaya.com/wireless

http://associate2.avaya.com/sales_market/wireless/EC500page.htm

# Overview of EC500 Extension to Cellular

# 1

## Introduction

EC500 offers your users the freedom to work anywhere, anytime, using any type of cellular or wireless phone. With EC500, calls to an office number are extended to a cell phone, allowing users to receive work-related calls wherever they are and whenever they need to. Additionally, the cell phone can be administered so that when a user calls into the office, the user's name and office telephone number appear in the caller ID display of the phone being called. When the EC500 cell phone is administered to send office caller ID, the user also has the option of picking up an ongoing EC500 cell phone call on the office phone upon entering the office.

The cell phone user receives the same features and capabilities for incoming calls as a caller ID-enabled analog telephone connected directly to the DEFINITY or Avaya Communications Server running MultiVantage software. EC500 provides this capability regardless of the cell phone's Cellular Service Provider or the cellular standard in use.

This guide describes the high-level functions of EC500, hardware and software requirements for implementation, and the installation, administration, and maintenance tasks necessary to set up and maintain Release 4 of EC500 Extension to Cellular.

## What's New in EC500 Release 4

EC500 Release 4 enhancements simplify administration and reduce costs. They are:

- ARS and AAR routing of EC500 calls (loopback trunk elimination)

    Prior to EC500 R4 there were special loopback tie trunks used to relay XMOBILE calls to a public network trunk.

    In EC500 R4, calls to an XMOBILE station can be extended out of the PBX directly over an ISDN trunk connected to the public network. This change simplifies the administration of EC500. The end-user functionality is unchanged. The regular ARS or AAR routing tables are used to select the trunk for the EC500 call.

- Enhancements to Call Detail Recording.

    You can now choose whether or not to keep Call Detail Records for EC500 calls.

- Call Filtering

    This feature allows you to manage cellular phone costs by limiting the calls extended to the cellular network for EC500 users. Customers can choose to deliver, on a per-user basis, only external calls (from a customer), only internal calls, all calls, or no calls.

- EC500 Scheduler with Unified Communications Center (UCC)

    The EC500 Scheduler service provides the user with an HTML browser-based interface in which a user can administer entries and rules to schedule events that turn EC500 ON or OFF. You can configure your profile based on time and day of the week.

    **NOTE:**
    To run EC500 Scheduler Application, you need to purchase the Unified Communications Center (UCC), version 1.0 or later, in addition to EC500.

- Updating from a prior release

    See Appendix B, "Upgrades from Prior Releases", for further information.

## Customer Configurations

EC500 provides the ability to operate a cell phone as a standard, caller ID enabled telephone connected directly to the DEFINITY or Avaya Communications Server running MultiVantage software. The most commonly implemented configuration is Dual Bridge Mode. This configuration provides two call appearances to bridge a cell phone with Call Waiting to an office number. Dual Bridge Mode configuration allows for administration that causes office caller ID to be sent to calls on the switch from the EC500 cell phone. A variation on this implementation would be to bridge only one call appearance on the cell phone to the office number.

In cases where a user does not require a physical office number, the cell phone can be bridged to an Administration Without Hardware (AWOH) extension on the DEFINITY or Avaya Communications Server running MultiVantage software. This configuration gives the user an enterprise presence for incoming business calls via the cell phone.

This guide focuses on the Dual Bridge Mode. Other customer configurations - Multiple Bridge Mode, Single Bridge Mode, and Standalone Mode are discussed in Appendix A.

An EC500 cell phone can now be administered to allow office caller ID to be sent when the user calls into the switch from that EC500 cell phone.

## Platforms

Release 4 of EC500 is available on any DEFINITY or Avaya Communications Server running MultiVantage software switch software. Any capacity differences are due to differences in the numbers of stations, trunks, circuit packs, and media modules supported on the different platforms.

## System Administration Terminal

The screens in this guide may not match the version that exists on the system administration terminal for your DEFINITY or Avaya Communications Server running MultiVantage software. However, all fields described here as essential for EC500 setup and administration can be found on all versions of the terminals, regardless of any variation in field layouts. In the screens shown here, the essential fields are indicated in bold-face underlined type.

## Feature Description

EC500 allows a cell phone in an external network to be treated as if it were an extension on the DEFINITY or Avaya Communications Server running MultiVantage software. This is accomplished by administering the cell phone as an XMOBILE bridge of the user's main office number.

There are three modes in which an EC500 cell phone can be mapped to the user's main office number. The modes are used to control the degree of integration between their cell phone and main office number. The modes are valid for EC500 call only. That is, all calls to the user's main office number when EC500 is enabled and calls from the cell phone into the user's switch when EC500 is enabled. All other types of calls, such as direct calls to and from the published cell phone number are unaffected by EC500 and the user's cell phone performs exactly as it did prior to enabling it for EC500. These mapping modes are administered on the XMOBILE Station screens.

1) **EC500 Calls Terminating to the Cell Phone**

This mode is achieved when the `Mapping Mode` field on the XMOBILE Station screen is set to **termination**. Here, EC500 calls may terminate only to the remote cell phone via routing from the bridged XMOBILE extension. Calls originating from the cell phone are completely independent of EC500 and behave exactly as before enabling EC500.

2) **EC500 Calls Originating from the Cell Phone**

This mode is achieved when the `Mapping Mode` field on the XMOBILE Station screen is set to **origination**. Here, calls originating from the remote cell phone into the user's main switch are received by the XMOBILE bridged extension and considered EC500 calls. These EC500 calls behave as if they were originated from the user's main office number and send office caller ID to the called party. The sending of office caller ID always occurs for EC500 calls when the user has **origination** mapping mode, regardless of whether EC500 is enabled or disabled.

3) **EC500 Calls Both To and From the Cell Phone**

This mode is achieved when the `Mapping Mode` field on the XMOBILE Station screen is set to **both**. Here, EC500 calls may terminate to the remote cell phone and calls originating from the remote cell phone into the user's main switch are considered EC500 calls. The EC500 cell phone sends office caller ID, while at the same time keeping the cell phone Call Waiting capabilities in effect while receiving calls. The sending of office caller ID always occurs for EC500 calls when the user has **both** mapping mode, regardless of whether EC500 is enabled or disabled.

## Office Caller ID

Depending on the XMOBILE Station administration, the EC500 cell phone gains the identity of the user's office extension when calling into the office switch. When the EC500 user is administered to send the office caller ID and calls into the office, the person receiving the call sees the office name and number of the caller, not the cell phone caller ID. This type of administration provides both in-house Caller Identification at the destination phone and allows the user to bridge onto the office phone.

When the EC500 cell phone is administered to send office caller ID, this behavior is in effect whether the EC500 extensions are enabled or disabled. However, while someone else is using the line appearance on the office phone that is the same as that administered for the EC500 cell phone call to send office caller ID, the office caller ID is temporarily not available.

An EC500 cell phone that is administered to gain the identity of the office phone has the following functionality:

1. When calling a number on the office switch, the user's name and office phone extension appear as Caller Identification on the destination phone.

2. Because of the bridging administration that causes the EC500 cell phone to gain the identity of the office phone, the user can initiate a call to the office on the EC500 cell phone, walk into the office, and then pick up that same call, in progress, on the office phone.

3. When calling into the same office switch on which EC500 is administered, the EC500 cell phone keypad functions as if it were an office phone extension.

   For example:

   ■ When a user calls into Corporate Voicemail, the EC500 becomes essentially an extension on the switch and will be recognized by the voice mail system as such.

   ■ When a user calls into the EC500 Access Number from an EC500 Cell Phone that sends office caller ID and invokes the EC500 enable/disable or Change Station Security Code Feature Access codes, the EC500 cell phone behaves as if it were an extension on the switch.

This feature is best administered by setting the `Mapping Mode` field on the Station screen to **both** for the XMOBILE station associated with the second line appearance of the office phone. The first line appearance should be set to **termination** on this screen.

## Enabling and Disabling EC500

The extensions for the cell phone can be disabled and enabled by the user at any time from any telephone with Touch Tone capability. Security codes are set up for this feature to protect the phone from unwanted tampering.

The EC500 enabling/disabling feature can be invoked at:

- The office number associated with the cell phone.

- Any other station on the switch.

- Any phone (cell phone or otherwise) in the external network, through the trunk interface to the switch via an EC500 Access Number (Telecommuting Access Number on the System Administration Terminal).

Enabled/disabled status can be displayed for an EC500 cell phone using the *status station* command. See Chapter 5, "Status Station Command", for more information.

The administration of an EC500 to send the office caller ID remains in effect whether the phone is in the enabled or disabled state.

## Call Waiting, Call Identification, and Voice Mail

EC500 allows use of standard cellular features such as incoming call waiting and caller identification.

- If the cell phone (and network) supports calling number identification, the DEFINITY or Avaya Communications Server running MultiVantage software delivers the calling number to the cell phone. For internally originated calls, the calling number may be presented in either the national numbering plan format (i.e. 10 digits) or as a less than 10 digit extension, depending upon how it is administered. Some cellular phone networks only pass calling number information in the national format while others are more flexible.

- If the cell phone (and network) supports call waiting, EC500 can be administered to deliver a second call to the cell phone while it is busy on another call. The cell phone features (i.e. swapping calls, conferencing the calls) may then be used to answer the second call and manipulate the two calls at the cell phone.

Since the cell phone is treated as a local extension on the DEFINITY or Avaya Communications Server running MultiVantage software, it can be completely integrated with the Corporate voice mail system while retaining its own Cellular Service Provider voice mail. The office number retains the primary extension on the DEFINITY or Avaya Communications Server running MultiVantage software. Calls to the office number simultaneously ring the office number and the cell phone. If neither answer then standard coverage arrangements take effect. As

needed, EC500 can be disabled when not in use in order to ensure the use of the Corporate voice mail.

The System Administrator can control in-service and out-of-service status of the bridged extensions through a busy out and release maintenance capability.

# ARS/AAR Routing

EC500 builds on a DEFINITY or Avaya Communications Server running MultiVantage software feature called X-Mobility that allows extensions to be remotely connected over an ISDN trunk. Unlike traditional off-premises extensions, the stations are not tied to fixed channels on the T1/E1 interface. Instead, channels are allocated dynamically with each new call, allowing significantly more efficient usage of the T1/E1 interfaces via traffic engineering. In most respects, these stations, administered with a station type of XMOBILE, behave like regular analog (POTS) telephones. In particular, they can be bridged to office numbers.

Routing of EC500 extended calls takes the following path:

1. ARS (or AAR) digit conversion is applied to the administered cell phone number.
2. ARS (or AAR) analysis is applied to the result of step 1.
3. The ARS (or AAR) analysis chooses a routing pattern. Each entry in the routing pattern is tried in order; however, if the trunk group for a particular entry is non-ISDN or non-IP, it is skipped over.
4. A trunk group is chosen for the EC500 call and it is sent out over it.

If for some reason no trunk is available, the EC500 call is not extended; however, the original call is not affected. The caller will continue to receive ringback until the call covers or the caller abandons it.

# Call Filtering

Call Filtering allows you to manage cellular phone costs by limiting the type of calls extended to the cellular network based on the type of incoming call received at their XMOBILE stations. You can choose to deliver, on a per user basis, external calls, internal calls, all calls, or no calls. Internal call filtering allows the switch to extend EC500 calls for all internal incoming calls and external call filtering does the same for all public-network incoming calls. EC500 calls are not extended when the `Calls Allowed` field is set to **none**. When call filtering does not allow a call, the EC500 call is not delivered, the call may be forwarded, go to coverage, or apply busy treatment for the calling party.

## Detailed description

Call Filtering provides the system administrator with control over the type of incoming calls that EC500 users will receive on their cellular phones. With EC500 Call Filtering, the system administrator can restrict cell phone calls based on the type of the incoming call received by the XMOBILE station.

### Call filtering and bridged XMOBILE stations

XMOBILE stations can connect cell phones in bridged configurations. Dual-bridged XMOBILE stations are bridged to a principal published phone number - usually a user's desk set. Up to two call appearances of the desk set, or an AWOH station, are bridged to two separate XMOBILE stations. Both XMOBILE stations map to the same cell phone number. The ACP server calls the cell phone when the principal station receives an incoming call. Calls are delivered to the cell phone based on the screening of internal and external calls. Screening applies after the called party restriction of the station's assigned COR, the XMOBILE station's EC500 state, and the EC500 XMOBILE station mapping are evaluated.

### Call filtering and standalone XMOBILE stations

XMOBILE stations can connect cell phones as standalone stations. The ACP server calls the cell phone when the published number of the standalone XMOBILE station receives an incoming call. Calls are delivered to the cell phone based on the screening of internal and external calls. If the call cannot be delivered to the cell phone and the call is not redirected, then the calling party hears a busy signal. Screening is applied only after the called party restriction of the station's assigned COR, the XMOBILE station's EC500 state, and the EC500 XMOBILE station mapping mode are evaluated.

Call processing uses the call filter setting in conjunction with the call restrictions in an XMOBILE station's COR to determine the called party restrictions for EC500, DECT, and PHS XMOBILE stations. The station's call filter setting is used to allow or deny delivery of internal and/or external incoming calls at the mobile phones.

# Call Detail Recording Enhancements

EC500 provides Call Detail Recording (CDR) options for calls to cell/external phones. You can administer such calls to be treated as:

- Trunk calls (CDR record generated)

  This option may be desirable if you want to track calls to cell phones for reporting or billing purposes

  or

- Calls to an internal station extension (no trunk CDR record generated)

When a call is made to an XMOBILE station, the `CDR for Calls to EC500 Destination` field on the Configuration Set screen determines whether a CDR report is generated.

This allows you flexibility in billing or tracking calls to phones that are mapped to XMOBILE extensions.

➡️ **NOTE:**
> CDR reporting for EC500 calls relies on the `CDR Reports` field on the Trunk Group screen. If this field is **n**, CDR reports will not be generated even if the `CDR for Calls to EC500 Destination` field on the Configuration Set screen is **y**.

`Configuration Set` fields on the XMOBILE Station screen must contain the configuration set number when the `CDR for Calls to EC500 Destinations` field is **y**.

## Capacity Limitations

The maximum number of XMOBILE stations that can be administered on a switch is based on the station maximum on the switch. Therefore, the number of cell phones in EC500 is limited to 33% of the station maximum, assuming Dual Bridge Mode, and depending upon the user configuration of your implementation. In addition, there is a practical limit based upon the number of trunks available to service XMOBILE calls. Maximum cell phones are:

- 12,000 for S8700 Media Server for Multi-Connect Configurations
- 8,300 for Avaya MultiVantage DEFINITY Server R
- 4,000 for S8700 Media Server for IP-Connect Configurations
- 800 for Avaya MultiVantage DEFINITY Server SI
- 300 for S8300 Media Server with Avaya G700 Media Gateway and other small configurations

See "Display Capacities" in Chapter 5, for how to access XMOBILE station usage information for your system.

Traffic engineering is needed to ensure that there are enough trunks available to handle the traffic sent to the cell phones.

## Security Considerations

The EC500 feature does not degrade security on the DEFINITY or Avaya Communications Server running MultiVantage software. There is no capability for the malicious user to change the destination (cell phone number) that XMOBILE calls are sent to.

EC500 makes use of station security codes to ensure that the user has control over who is enabling and disabling his or her extensions.

In addition, the XMOBILE station busy out and release capability allows an Administrator to temporarily take extensions offline as necessary due to lost or stolen cell phones. For a more permanent solution, remove the bridging administration associated with the XMOBILE station.

While using an EC500 cell phone on a business call the user may hear a beep tone indicating someone has picked up the office number and is listening in on the call. Avaya provides that beep tone for security purposes. If a user suspects unauthorized use of the office number or an enabled EC500 cell phone, the call should be ended immediately and the user's Station Security Code(s) should be changed immediately. See "Maintenance", and "Troubleshooting", for more information on handling this situation.

If additional security is required, administer one of Avaya's exclusion features.

## Feature Operation

When EC500 is administered, the cell phone is initially in a disabled state. Users need to enable their cell phones before they can begin to use the EC500 solution.

## Enabling/Disabling EC500

Enabling and disabling EC500 is accomplished using EC500 Enable and Disable Feature Access Codes. These need to be set through the System Administration Terminal and then communicated to the users. See "Administration" for procedures to set up these Feature Access Codes). Using these codes, the user can disable or enable all XMOBILE stations associated with his or her office number.

EC500 Enable and Disable Feature Access Codes are used in the following way:

- A user wishes to enable or disable all the EC500 XMOBILE stations using his or her office telephone. The user enters the following in sequence:

    1. The EC500 Enable Feature Access Code or Disable Feature Access Code.

    2. **#** to bypass entering the office telephone.

    3. The office number Station Security Code.

    4. A final **#.**

    The user receives either a confirmation or an intercept tone depending upon the success or failure of the procedure.

- A user wishes to enable or disable all EC500 XMOBILE stations using an internal extension that is not his or her office telephone. The user enters the following in sequence:

    1. The EC500 Enable Feature Access Code or Disable Feature Access Code.

    2. The extension number of his or her office number followed by **#**.

    3. The office number Station Security Code.

    4. A final **#**.

    The user receives either a confirmation or an intercept tone depending upon the success or failure of the procedure.

- A user wishes to enable or disable EC500 XMOBILE stations from any phone in the external network. Whether it's the user's cell phone or another phone does not make a difference in this procedure. The user enters the following in sequence:

    1. The Avaya EC500 Access Number (Telecommuting Access Number). The user should receive a dial tone.

    2. The EC500 Enable Feature Access Code or Disable Feature Access Code.

    3. The extension number of his or her office number followed by **#** or you can skip the extension number and enter only **#** from an EC500 cell phone that is administered to send office caller ID.

    4.  The office number Station Security Code.

    5.  A final **#**.

The user receives either a confirmation or an intercept tone depending upon the success or failure of the procedure.

These procedures enable or disable all EC500 XMOBILE stations at the same time. If you want your users to have the ability to individually enable and disable each bridged extension, see Appendix A, "Avaya EC500 - Other Configurations".

## Receiving Calls

EC500 is a solution for delivering office calls to a cell phone through the DEFINITY or Avaya Communications Server running MultiVantage software.

With EC500, when a call is made to an office number with a mapped XMOBILE bridge, the call is extended out of the DEFINITY or Avaya Communications Server running MultiVantage software to alert a cell phone. When the EC500 user has the EC500 `Calls Allowed` field set to **none**, EC500 calls are not delivered. If the DEFINITY or Avaya Communications Server running MultiVantage software is administered to send calling number information, then it is presented to the cell phone. When the cell phone answers the call, the DEFINITY or Avaya Communications Server running MultiVantage software treats it like a local answer of a physically connected station, and the following is true:

■  Status station of the XMOBILE station shows it off-hook. It shows both the port used on the outbound trunk group and the other connected port.

■  Any office number busy indicators tracking the XMOBILE station light up to show that it is busy.

■  Any other station linked to the call as part of a bridge or temporary bridge is able to bridge on to that call.

## Making Calls

Calls can be made to any number from the EC500 cell phone. Depending on how the EC500 XMOBILE stations are administered, the EC500 cell phone can function both as a standard cell phone and as an office extension when the calls are made into the user's office switch. Administering an EC500 cell phone to send office caller ID allows the EC500 cell phone call to the switch to appear as a local extension on the switch.

The `Mapping Mode` field on the Station screen for XMOBILE administration controls whether or not an EC500 cell phone is administered to gain the identity of the office phone (sends the office caller ID). To accomplish this, the `Mapping Mode` field for the EC500 XMOBILE station associated with the second line appearance of the office phone is set to **both**. Since the office caller ID is inactive if the associated line appearance on the principal office phone is in use, the second line appearance, which is less likely to be in use, is administered to allow

office caller ID. The EC500 XMOBILE station associated with the first line appearance should be set to **termination**.

If the `Mapping Mode` field entry is set to administer the EC500 cell phone to gain the identity of the office phone, then the EC500 call into the switch acts as if it originated from the XMOBILE station with the following results:

- Status station of the XMOBILE station shows it off-hook. It shows both the port used on the inbound group and the other connected port.

- Any office number busy indicators tracking the XMOBILE station light up to show that it is busy.

- Any other station linked to the call as part of a bridge or temporary bridge is able to bridge on to that call.

- The office name and number associated with the XMOBILE station appears as the Caller Identification number.

- The EC500 cell phone call is automatically bridged onto the EC500 user's desk phone, as well as connecting with the destination number.

## Feature Interactions

Generally, an XMOBILE station may be administered (and used) like an analog station. The following are exceptions:

### Attendant

If the `Calls Allowed` field is **internal**, attendant-originated and attendant extended calls are not delivered.

### Cellular Service Provider Voice Mail

While XMOBILE stations may have standard DEFINITY or Avaya Communications Server running MultiVantage software voice mail coverage (i.e. AUDIX®), cell phones usually have voice mail coverage from the Service Provider. Although there is no way to indicate a preference for use of a specific system, there is a way to coordinate the two systems.

It is generally possible to set up the number of don't answer rings so that one or the other always answer first. However, there are coverage options in both the DEFINITY or Avaya Communications Server running MultiVantage software (busy, active, send-all-calls) and the network (cell phone unavailable, network congested) that causes a call to immediately go to the respective voice mail. Users should realize that an unanswered call might result in a voice mail message in either mailbox.

### Class of Restriction

For calls toward an XMOBILE station, COR restrictions are applied normally for a call terminating to a station. In particular, if the XMOBILE station is a bridge, then the principal's COR applies, not the XMOBILE's. Any restrictions imposed by call filtering are applied after those imposed by the COR. Calling party restrictions pertaining to trunks (outward, tac-toll, and all-toll) have no affect on the launching of EC500 calls.

### DCS

Inter-switch calls on DCS trunks are treated as internal calls. When an EC500 user has the `Calls Allowed` field set to **internal** or **all**, then DCS calls are delivered to the cell phone. When an EC500 user has the `Calls Allowed` field set to **external** or **none**, then DCS calls are not delivered.

### Distinctive Alerting

Cell phones do not receive distinct rings for different types of calls.

### Duplication Station Administration

Use the **duplicate station** command for the bulk administration of XMOBILE stations. The `Calls Allowed` field defaults to **all** for all duplicated XMOBILE stations. They may be changed individually by using the **change station** command.

### EC500 Activation/Deactivation

EC500 calls can be enabled or disabled using the EC500 activate/deactivate feature access codes. EC500 users enable/disable EC500 calls using Avaya Call Processing (ACP) feature access codes or the UCC-EC500 Scheduler. The EC500 call filter settings can restrict EC500 calls only when the cell phone is EC500 enabled. When the cell phone is EC500 disabled, then no calls are delivered.

### EC500 with Office Caller ID calling another EC500 user

Incoming calls from other EC500 users are internal calls if Office Caller ID is enabled for the XMOBILE station associated with the cell phone. When an EC500 user has the `Calls Allowed` field set to **internal** or **all**, then the EC500 calls are delivered. When an EC500 user has the `Calls Allowed` field set to **external** or **none**, then calls from other EC500 users are not delivered.

### Feature Access Codes

The cell phone can activate DEFINITY or Avaya Communications Server running MultiVantage software features accessible via the Avaya EC500 Access Number (DEFINITY or Avaya Communications Server running MultiVantage software Telecommuting Access number).

### Message Waiting Indication

The cell phones cannot receive any form of message waiting indication directly from the DEFINITY or Avaya Communications Server running MultiVantage software.

### "Notify Me" under Unified Messenger® for MS Exchange®

If the user has access to the "Notify Me" feature of Unified Messenger for Microsoft Exchange (Version 4.0 or later), he or she is notified of messages in the Corporate voice mailbox via the cell phone's display. For more information on using this feature see "Setting Notify Me" in the *Unified Messenger Telephone User Interface Online Guide,* accessed via:

http://support.avaya.com

> **NOTE:**
> The user's cell phone must support text messaging to use this feature.

### QSIG

Inter-PBX calls on QSIG trunks are treated as internal calls. When an EC500 user has the `Calls Allowed` field set to **internal** or **all**, then QSIG calls are delivered. When an EC500 user has the `Calls Allowed` field set to **external** or **none**, then QSIG calls are not delivered.

# EC500 Scheduler Application

To run EC500 Scheduler Application, you need to purchase Unified Communications Center (UCC) in addition to EC500.

The EC500 Scheduler Application service provides the user with an HTML browser-based interface in which a user can administer entries and rules to schedule events that turn EC500 ON or OFF. You can configure your profile based on time and day of the week.

For additional information, see the *UCC Administrator's Guide* at:

http://support.avaya.com

# Installation and Planning

# 2

## Installation

This section describes installation and settings that must be in place before you can administer the EC500 bridges.

### Configuration/Environment Requirements

#### Software and Platforms

Release 4 of EC500 is available in DEFINITY or Avaya Communications Server running MultiVantage software switch software release MV1.2 running on all models. Any capacity differences are due to differences in the numbers of stations, trunks, and circuit packs supported on the different DEFINITY or Avaya Communications Server running MultiVantage software platforms.

### Setting Customer Options

The license for a customer with EC500 will have the following options set on the System-Parameters Customer-Options screen:

`G3 Version` - must be set to V11 or greater.
`Maximum XMOBILE Stations` - must be set to the number of XMOBILE stations that are to be used for EC500. This number must be greater than zero. It is usually two times the number of users.
`Enhanced EC500` - must be set to **y**. `G3 Version` and `Maximum XMOBILE Stations` must be set as described above before `Enhanced EC500` can be set to **y**.
`ARS` - must be set to **y**.
`Extended Cvg/Fwd Admin` - must be set to **y** (for access to the Telecommuting Access Number screen where you set the EC500 Access Code).
`ISDN-PRI` - must be set to **y.**

# Administration Planning

In a typical EC500 configuration, the XMOBILE station, which is mapped to the cell phone, is bridged to the principal published number, which is usually a user's office number. In order to support call waiting on the cell phone, two XMOBILE stations which are mapped to the same cell phone are bridged to the two call appearances of the office number. For example, XMOBILE Station One bridged to call appearance One of the office number and XMOBILE Station Two bridged to call appearance two of the office number. The second line appearance should be administered to send office caller ID.

EC500 gives users control over whether to receive EC500 calls on their cell phone. In Release 2, users have the ability to enable and disable all bridged extensions with one phone call. As in Release 1, they still have the ability to disable one extension at a time if desired.

## Planning Requirements

EC500 users expect to receive the following information from the Administrator:

- The Station Security Code associated with the office number.

- The Change Station Security Code Feature Access Code.

- EC500 Enable/Disable Feature Access Codes (EC500 Activation/Deactivation on the System Administration Terminal).

- The Avaya EC500 Access Number (Telecommuting Access Number on the System Administration Terminal).

In support of these requirements specify the following:

- A Dial Plan for XMOBILE extensions.

- An extension number for the Avaya EC500 Access Number.

- EC500 Activation/Deactivation codes to enable/disable EC500.

- A Feature Access Code for changing the Station Security Code.

## Dial Plan for XMOBILE Stations

Have a specific scheme for assigning XMOBILE stations. It makes it much easier to manage administration and user support with an organized, consistent numbering plan. There are different ways to organize a Dial Plan:

- Special first digits for XMOBILE extensions (Example 1).

- Correlation between XMOBILE extensions and office number (Example 2).

- Correlation between XMOBILE extensions and cell phone numbers (Example 3).

The following examples show possible ways to organize the Dial Plan.

**Example 1:**
| | |
|---|---|
| office number | 1**234** |
| cell phone | 777-555-8765 |
| XMOBILE 1 | 2**234** |
| XMOBILE 2 | 3**234** |

**Example 2:**
| | |
|---|---|
| office number | **123**4 |
| cell phone | 777-555-8765 |
| XMOBILE 1 | **123**5 |
| XMOBILE 2 | **123**6 |

**Example 3:**
| | |
|---|---|
| office number | 1234 |
| cell phone | 777-555-8**765** |
| XMOBILE 1 | 2**765** |
| XMOBILE 2 | 3**765** |

## Security Codes

Select an Avaya EC500 Access Number which is accessible externally as well as internally. This is set on the System Administration Terminal by setting the Telecommuting Access Number. See Chapter 3, "Administration".

Select Station Security Codes for the principal phone and its associated XMOBILE extensions.

Also, select a Station Security Code Change Feature Access Code (FAC). When an XMOBILE station is added, it needs to be given a default security code. Users should ultimately set their own office number Security Code using the Station Security Code Change Feature Access Code.

## Enabling and Disabling Feature Access Codes

Select the EC500 Feature Access Codes for Enabling and Disabling. These are set in the Change Feature Access Codes screen in the System Administration Terminal.

# Administration

<div style="text-align: right; font-size: 3em;">3</div>

## Introduction

This chapter provides instructions for setting up and administering:

- XMOBILE Station Administration

    - ARS/AAR Routing (see "Mobility Trunk Group" on page 3-4)

    - EC500 cell phones to send Officer Caller ID (see "Sending 10-digit Caller Identification for Locally Originated Calls" on page 3-8)

    - Call Filtering (see "Duplicate Station Administration" on page 3-11)

- Call Detail Recording enhancements (see"CDR for Calls to EC500 Destination" field on page 3-21)

- The Duplicate Station command for bulk addition of EC500 XMOBILE extensions (see "Duplicate Station Administration" on page 3-11)

- A Change Station Security Code Feature Access Number for the user to change the phone number Station Security Code (see "Creating a Change Feature Access Code for Station Security Codes (SSC)" on page 3-24)

- The EC500 Access Number for external access to Feature Access Codes features (see "Setting Up the Avaya EC500 Access Number" on page 3-16)

- The EC500 Enable/Disable Feature Access Codes (see "Setting Up the Avaya EC500 Enable/Disable Feature Access Codes" on page 3-17)

- Voice Mail coordination between the office and the cell phones (see "Voice Mail Administration" on page 3-18)

Most of the EC500 administration tasks are accomplished through the DEFINITY or Avaya Communications Server running MultiVantage software System Administration Terminal. The Terminal screens in this guide are meant to be examples and may not match exactly with the version that exists on the system administration terminal for your DEFINITY or Avaya Communications Server running MultiVantage software switch. However, all fields described here as essential for EC500 set up and administration can be found on all versions of the terminals, regardless of the variations in field layouts. In the screens shown here, the essential fields are indicated in bold-face underlined type.

## Setting the Customer Options for EC500

Before you can administer the EC500 extensions, the following settings in the System-Parameters Customer-Options screen on the System Administration Terminal must be enabled for your system as determined by the installed license file.

The fields and their settings are:

- `G3 Version` - must be set to **V11** or greater.

- `Maximum XMOBILE Stations` - must be set to the number of XMOBILE stations that are to be used for EC500. This number must be greater than zero. It is usually two times the number of users.

- `Enhanced EC500` - must be set to **y**. G3 Version and Maximum XMOBILE Stations must be set as described above before Enhanced EC500 can be set to **y**.

- `ARS` - must be set to **y**.

- `Extended Cvg/Fwd Admin` - must be set to **y** (for access to the Telecommuting Access Number screen where you set the Avaya EC500 Access Code).

- `ISDN-PRI` - must be set to **y**.

## XMOBILE Station Administration

The cell phone number is mapped to an XMOBILE station type on the DEFINITY or Avaya Communications Server running MultiVantage software. If the cell phone supports call waiting, then two XMOBILE extensions are administered on the DEFINITY or Avaya Communications Server running MultiVantage software for the cell phone. Each extension is bridged to a call appearance of a multi-function station. The station may be a standard office number (presumably the primary extension of the cell phone user) or may be an AWOH (Administration Without Hardware) dummy station to provide a single DEFINITY or Avaya Communications Server running MultiVantage software extension for the cell phone.

> **NOTE:**
> When the EC500 is administered, the initial state of the cell phone is disabled. You must enable the EC500 in order to receive calls from the DEFINITY or Avaya Communications Server running MultiVantage software.

In order to effectively administer the EC500 cell phone to gain the identity of the office phone, the XMOBILE station bridged to the first line appearance should be administered as `termination`, and the XMOBILE station bridged to the second line appearance should be administered as `both`. For an explanation of administering the EC500 cell phone to send the office caller ID, see "Office Caller ID", in Chapter 1.

For information on adding XMOBILE stations in bulk, see "Duplicate Station Administration". For display capabilities to list XMOBILE stations by cell phone number, see "List XMOBILE by Cell Phone Number" in Chapter 5.

In our example we administer two cellular mapped XMOBILE stations as bridges of a standard DEFINITY or Avaya Communications Server running MultiVantage software office number to a cell phone. The office number is extension 1234 and the two bridged XMOBILE stations mapped to the cell phone are 1034 and 1134.

To administer the first XMOBILE station:

1. Type ***add station 1034*** and press **Enter**.

   *The Station screen appears.*

**Figure 3-1.** **Station Screen**

```
add station 1034                                              Page 1 of 3
                             STATION

Extension: 1034                      Lock Messages? n          BCC: 0
      Type: XMOBILE                 Security Code: 1234567      TN: 1
                                   Coverage Path 1:            COR: 1
      Name: John's cell 1          Coverage Path 2:            COS: 1
                                   Hunt-to Station:


STATION OPTIONS
        XMOBILE Type: EC500                    Message Lamp Ext: 1034
       Display Module? n                    Message Waiting Type: NONE

Mobility Trunk Group: ars                         Calls Allowed: all
   Configuration Set: 1

CELL PHONE NUMBER MAPPING
         Dial Prefix: 1
   Cell Phone Number: 7325551212
        Mapping Mode: termination
```

2. Enter the following fields with the appropriate values:

   ■ `Type` - **XMOBILE**

   ■ `Security Code` - up to 7 digits

   ■ `Name` - this is a suggested value. Enter a value that will indicate that the station is for a particular person's cell phone, and for a specific call appearance.

   ■ `XMOBILE Type` - EC500

   ■ `Mobility Trunk Group` - enter **ars** or **aar**. Depending on which is chosen, the routing features of ARS or AAR are applied using the number in the `Cell Phone Number` field prefixed by the contents, if any, of the `Dial Prefix` field. The preferred is **ars** but if you want to use **aar**, private networking should be licensed.

   ■ `Display Module` - **n**.

   ■ `Message Waiting Type` - **none**.

   ■ `Configuration Set` - enter with any value between 1-10, corresponding to the appropriate Configuration Set. See "Changing Configuration Sets" in this chapter.

■ `Dial Prefix` - any number that might be required besides the cell phone number itself. For example, 1 for U.S. domestic long distance, or 011 for international cell phone numbers.

> ⇒ **NOTE:**
> After you have established a Dial Prefix for a particular Cell Phone Number you can change it at a later date for one XMOBILE station and the system will automatically change it for all the other XMOBILE stations that have the same Dial Prefix/Cell Phone Number pair.

■ `Cell Phone Number` - phone number (external to DEFINITY or Avaya Communications Server running MultiVantage software) assigned by the cellular Service Provider for the cell phone. For international calls, country codes must be included.

> ⇒ **NOTE:**
> It is recommended that you enter a full 10-digit Cell Phone Number regardless of whether the cell phone is local or not. Note that your ARS Analysis has to be administered to handle this.

■ `Mapping Mode` - values for this field are **origination**, **termination**, **both**, or **none**. The XMOBILE station associated with the first line appearance should ALWAYS be administered as **termination**. See "Office Caller ID" in Chapter 1 for more information.

**termination** - the cell phone may *only* be used to terminate calls from its associated internal XMOBILE extension.

**origination** - the cell phone may *only* be used to originate calls from its associated internal XMOBILE extension, by dialing into the office switch.

**both** - the EC500 cell phone can be used for both sending office caller ID and receiving EC500 calls.

**none** - the XMOBILE station is administratively disabled. Entering this value in the `Mapping Mode` field is an alternative to the busy out command.

> ⇒ **NOTE:**
> Only one XMOBILE station associated with a cell phone number can be set to **both** or **origination.**

See Chapter 1, "Making Calls", for information on EC500 usage and the importance of the `Mapping Mode` field.

■ **Calls Allowed** - values for this field are **internal**, **external**, **all** and **none**. The field defaults to **all** for newly added XMOBILE stations.

**internal** - the cell phone receives only internal calls. Public network calls to standalone XMOBILEs receive busy treatment or are redirected.

**external** - the cell phone receives only public network calls. Internal calls to standalone XMOBILEs receive busy treatment or are redirected.

**all** - the cell phone receives both internal and public network calls.

**none** - the cell phone will not receive any calls.

➤ **NOTE:**
This field display only when the XMOBILE Type field is **EC500** and the Mapping Mode field is **termination** or **both**.

3. Press **Next Page**.

*The next page of the Station screen appears.*

**Figure 3-2.  Station Screen (2 of 3)**

```
add station 1034                                              Page   2 of   3
                               STATION
FEATURE OPTIONS
          LWC Reception: msa-spe
         LWC Activation? y

           CDR Privacy? n                            Data Restriction? n
                                           Call Waiting Indication? n
                                      Att. Call Waiting Indication? n
 Bridged Call Alerting? y                   Distinctive Audible Alert? n
      Switchhook Flash? n

                                  Per Station CPN - Send Calling Number?

                                          Audible Message Waiting? n

  MWI Served User Type:
```

4. Set the following fields to **n**: Switchhook Flash, Call Waiting Indication, Att. Call Waiting Indication, and Distinctive Audible Alert.

5. Press the **Next Page** button.

   *The next page of the Station screen appears - page 3 of 3.*

**Figure 3-3. Station Screen (3 of 3)**

```
add station 1034                                            Page   3 of   3
STATION




ABBREVIATED DIALING
     List1:____              List2:___              List3:

HOT LINE DESTINATION
         Abbreviated Dialing List Number (From above 1, 2 or 3):
                                                  Dial Code:

     Line Appearance: brdg-appr  Btn:1   Ext:1234
```

6. On this screen you bridge the XMOBILE station extension to the office number or AWOH line. Enter the fields `Line Appearance`, `Btn`, and `Ext.` with the appropriate information. The `Ext.` field should be the extension of the office number or AWOH line administered for the user.

7. Press **Enter** or **Submit**, depending on your terminal.

Administer a second EC500 Extension for the cellular user to take advantage of the cell phone's call waiting feature:

1. Type ***add station 1134*** and press **Enter**.

   *The Station screen appears.*

2. Enter all fields as shown for the first station you administered, with the following exceptions:

   ■ The `Name` field in the Station screen, page 1, should reflect that this second station is for call appearance 2.

   ■ The `Mapping Mode` field, page 1, must be set to `both` (termination and origination). For an explanation of the administration of the `Mapping Mode` field, see "Office Caller ID", in Chapter 1.

   ■ The `Btn:` field in the Station screen, page 3 should be set to **2** for the second line appearance of the office number. ***This is very important***.

## Sending 10-digit Caller Identification for Locally Originated Calls

Most cell phones require a 10-digit number as the calling number. The DEFINITY or Avaya Communications Server running MultiVantage software must be administered to provide this for locally-originated calls. To administer this on the System Administration Terminal for stations associated with either ISDN or H.323 IP trunks:

1. Type change **isdn public-unknown-numbering** and press **Enter**.

   *The ISDN Numbering - Public/Unknown Format screen appears.*

**Figure 3-4.   ISDN Numbering - Public/Unknown Format Screen**

```
change isdn public-unknown-numbering                          Page   1 of   8
ISDN NUMBERING - PUBLIC/UNKNOWN FORMAT

Ext Ext   Trk     CPN         Total CPN  Ext Ext   Trk       CPN          Total CPN
Len Code  Grp(s)  Prefix         Len     Len Code  Grp(s)    Prefix          Len

 4   1            732817         10
```

2. Create an entry (as above) to add a prefix to extensions to create a 10-digit calling number.

   ■ `Ext Code` - the starting digit(s) of the extension.

   ■ `Trk Grp(s)` - leaving this blank means that it applies to all trunks in the system.

3. Press **Enter** or **Submit**, depending on your terminal.

# Administration of Call Filtering

To set up a new XMOBILE station and allow it to receive only internal calls:

1. Type *add station 1135* and press **Return**.

   *The Station screen appears.*

**Figure 3-5.   Station Screen**

```
                               STATION
:xtension: 1135                   Lock Messages? n                      BCC: 0
      Type: XMOBILE                      Security: *                     TN: 1
                                 Coverage Path 1:                       COR: 1
     Name: John Doe              Coverage Path 2:                       COS: 1
                                 Hunt-to Station:

:TATION OPTIONS
               XMOBILE Type: EC500                 Message Lamp Ext: 1135
              Display Module? n                  Message Waiting Type: none

       Mobility Trunk Group: ars
          Configuration Set: 1                        Calls Allowed: internal

  CELL PHONE NUMBER MAPPING
                Dial Prefix:
          Cell Phone Number: 7321234567
               Mapping Mode: termination
```

2. In the XMOBILE Type field, type **EC500**.

3. In the Mobility Trunk Group field, type **ars**.

4. In the Calls Allowed field, type **internal**.

   This allows the user to receive only internal calls.

5. In the Mapping Mode field, type **termination**.

   This allows the user to receive calls from its associated internal XMOBILE extension.

6. In the Dial Prefix field, enter the number that might be required besides the cell phone number itself. For example, 1 for U.S. domestic long distance, or 011 for international cell phone numbers.

7. In the Cell Phone Number field, type **7321234567**.

8. Press **Enter** to save your changes.

## Detailed description

Call Filtering provides the system administrator with control over the type of incoming calls that EC500 users will receive on their cellular phones. With EC500 Call Filtering, the system administrator can restrict cell phone calls based on the type of the incoming call received by the XMOBILE station.

### Call filtering and bridged XMOBILE stations

XMOBILE stations can connect cell phones in bridged configurations. Dual-bridged XMOBILE stations are bridged to a principal published phone number - usually a user's desk set. Up to two call appearances of the desk set, or an AWOH station, are bridged to two separate XMOBILE stations. Both XMOBILE stations map to the same cell phone number. The ACP server calls the cell phone when the principal station receives an incoming call. Calls are delivered to the cell phone based on the screening of internal and external calls. Screening applies after the called party restriction of the station's assigned COR, the XMOBILE station's EC500 state, and the EC500 XMOBILE station mapping are evaluated.

### Call filtering and standalone XMOBILE stations

XMOBILE stations can connect cell phones as standalone stations. The ACP server calls the cell phone when the published number of the standalone XMOBILE station receives an incoming call. Calls are delivered to the cell phone based on the screening of internal and external calls. If the call cannot be delivered to the cell phone and the call is not redirected, then the calling party hears a busy signal. Screening is applied only after the called party restriction of the station's assigned COR, the XMOBILE station's EC500 state, and the EC500 XMOBILE station mapping mode are evaluated.

# Duplicate Station Administration

You can administer up to 16 XMOBILE stations at one time. You do this by "duplicating" in bulk a station that you have already administered. You must be sure to administer Security Codes for all principal phone numbers so that Feature Access Codes for the XMOBILE stations can be used.

For XMOBILE stations, the **duplicate station** command is used as follows:

**duplicate station [extension] ['start' extension'] ['board' 'x'] ['count' (1-16)]**

where:

- The **duplicate station [extension]** is the extension of the XMOBILE station to be copied.

- The **start extension** accepts any unassigned extension and is used as the first extension to be assigned to the duplicated stations.

- The **board** option specifies the type of board to be used.

    - If an XMOBILE is the source extension, then the board option may be omitted or contain an x.

    - When duplicating a single XMOBILE extension, and the **board** or **count** option is used, an extension is pre-selected for the user. For example, if extension 30002 is an XMOBILE then the following command line options are valid:

        — **duplicate station 30002 board x**

        — **duplicate station 30002 count 1**

    - XMOBILE stations may not be duplicated to wired board types. If an XMOBILE terminal is duplicated to a wired board type (i.e., analog, bri, digital, or hybrid) or w (wireless type), then the error message, **Object type and port type inconsistent** displays.

- The start option is used to indicate where pre-selected extensions should start from.

- When the count option is used, extensions created through duplication are pre-selected. The count option may be omitted or contain a number from 1-16. If the count option is not used on the command line, then no extensions are pre-selected and you must administer all duplicated extensions on the first duplicate Station screen.

The following are examples of duplicate station commands for EC500 XMOBILE stations:

**duplicate station 30002**
No extensions are preselected - **count** or **board** option not used.

**duplicate station 30002 board x**
One extension is pre-selected - single station with board **option**.

**duplicate station 30002 count <dup-num>** - where dup-num is a number from 1-16.
**dup-num** extensions are pre-selected. **count** option used.

**duplicate station 30002 start 35555 count <dup-num>** - where dup-num is a number from 1-16.
**dup-num** extensions are pre-selected starting with extension 35555. **count** and **start** options used.

**duplicate station 30002 start 35555 board x count <dup-num>** - where dup-num is a number from 1-16.
**dup-num** extensions are pre-selected starting with extension 35555. **board**, **count**, and **start** options used.

In our example we administer four extensions, duplicated from extension 30001, allowing the system to pre-select the extensions for us.

To administer the four duplicated XMOBILE stations:

1. Type **duplicate station 30001 count 4** and press **Enter**.

   *The first duplicate Station screen appears.*

**Figure 3-6.    Duplicate Station Screen (1 of 5)**

```
duplicate station 30001 board x count 4                    Page 1 of 5


                                   STATION

                                    Security
Ext         Name                    Code
30005
30006
30007
30008
```
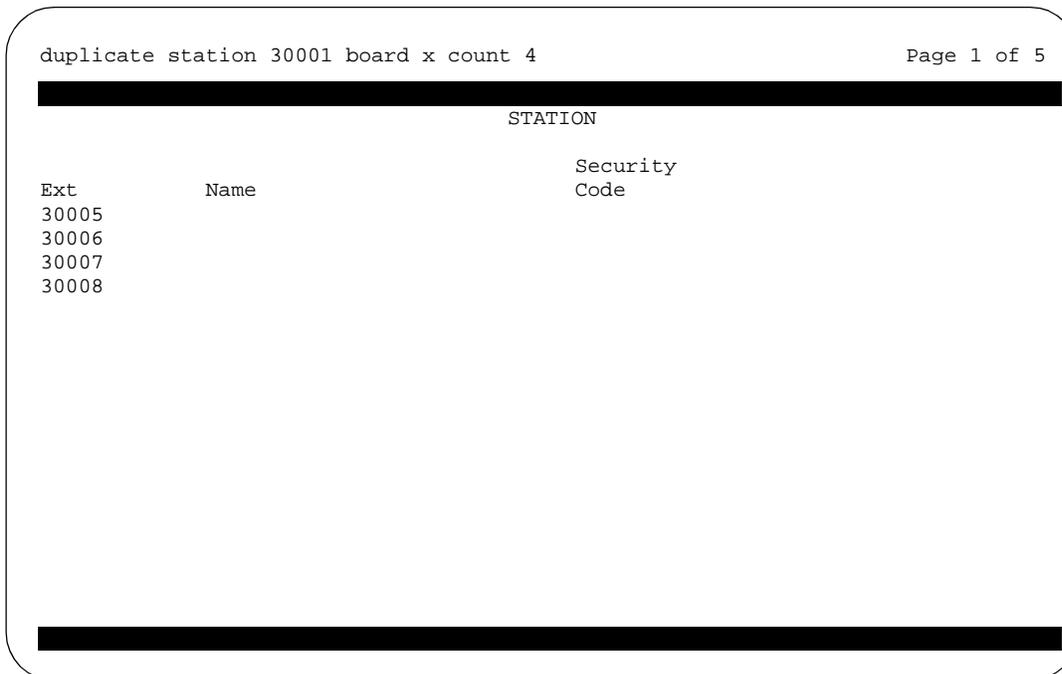
2. As needed, edit the fields as follows:

- `Ext` - Extensions can be modified, added, or deleted on this screen.

- `Name` - for entry of user's name. Entry is free-form and is not required.

- `Security Code` - must contain only digits. An XMOBILE extension must have this administered in order to use the EC500 Feature Activation Code. After a Security Code has been entered for an extension and you press Return to go to the next entry, the `Security Code` field changes to an `*` for security purposes. The `Security Code` can be viewed again and changed by using the change station command for the extension.

**3.** Press **Enter.**

*The second duplicate Station screen appears.*

**Figure 3-7. Duplicate Station Screen (2 of 5)**

```
duplicate station 30001 board x count 4                          Page 2 of 5


                                 STATION

Ext       Dial  Cell Phone      Cfg Mob  Line        Button   Principal
          Pfx   Number          Set Trk  Appearance  Number   Extension:
                                    Grp

30006                           1    3   call-appr
30007                           1    3   brdg-appr     2      12345
30008                           1    3   call-appr
30009                           1    3   call-appr
```

4. Edit the fields shown on the second duplicate Station screen as follows:

- `Ext` - This field is read-only. the Ext field can only be changed on the first duplicate Station screen.

- `Dial Pfx` - corresponds to the `Dial Prefix` field on the XMOBILE station screen. It is 4 digits in length and may contain the values 0-9, * and #, or blank. If the same Cell Phone Number is administered for multiple extensions on the duplicate station screen, then the `Dial Pfx` field associated with each instance of the `Cell Phone Number` field must be the same.

- `Cell Phone Number` - typically contains a 3 digit area code plus 7 digit main number, unformatted.

- `Cfg Set` - required for EC500 `XMOBILE Type`. Corresponds to the `Configuration Set` field on the first XMOBILE Station screen.

- `Mob Trk Grp` - corresponds to the `Mobility Trunk Group` field on the first XMOBILE Station screen.

- `Line Appearance` - corresponds to the `Line Appearance` field on screen 5 of the XMOBILE Station screens. When **brdg-appr** is entered, the `Button Number` and `Principal Extension` fields appear. The extension and button number for the principal extension that the XMOBILE extension is bridged to must be entered here.

For all duplicated stations, if the XMOBILE Type of the original station is EC500, the system defaults the Mapping Mode field to **termination**. For XMOBILE Type DECT and PHS, the Mapping Mode is defaulted to **both**.

5. Press **Next Page**.

*The third duplicate Station screen appears.*

This is the first in the series of three Station screens that are identical to the Station screens used to administer the original XMOBILE station. See Figures Figure 3-1, Figure 3-2, and Figure 3-3. These screens display the fields for the XMOBILE station that was used as a basis to duplicate from.

You can modify the fields on these three screens, with the exception of the fields you have just edited on the first two Duplicate Station screens and any other fields related to EC500. The fields you have edited on the first two screens appear on these three screens as follows:

- `Dial Prefix` (screen 3) - always blank and read-only.

- `Cell Phone Number` (screen 3) - always blank and read-only.

- `Mapping Mode` (screen 3) - always matches the original station and is read-only.

- `Configuration Set` (screen 3) - always matches the original station and is read-only.

- `XMOBILE Type` (screen 3) - always matches the original station.

- Mobility Trunk Group (screen 3) - always matches the original station and is read-only.

- Calls Allowed (screen 3) - always matches the original station.

- `Line Appearance` (screen 5) - always read-only.

If you modify the other fields on these duplicate Station screens 3, 4, and 5, the edited values reflect back to the duplicated extensions. However, the changes you make to these screens will NOT be reflected back to the original XMOBILE station that you are duplicating from. To edit either the original or duplicated EC500 XMOBILE station fields you need to use the **change station <XMOBILE extension>** command.

# Setting Up the Avaya EC500 Access Number

EC500 uses the DEFINITY or Avaya Communications Server running MultiVantage software Telecommuting Access Number for users to enable or disable EC500, or change their office number's Station Security Code.

**➡ NOTE:**
> Skip this procedure if a Telecommuting Access Number already exists on your system.

To configure the DEFINITY or Avaya Communications Server running MultiVantage software for EC500 access:

1. Type **change telecommuting-access** and press **Enter**.

   *The Telecommuting Access screen appears.*

**Figure 3-8. Telecommuting Access Screen**

```
change telecommuting-Access                                    Page   1 of   1
                          TELECOMMUTING ACCESS

                  Telecommuting Access Extension: 1111
```
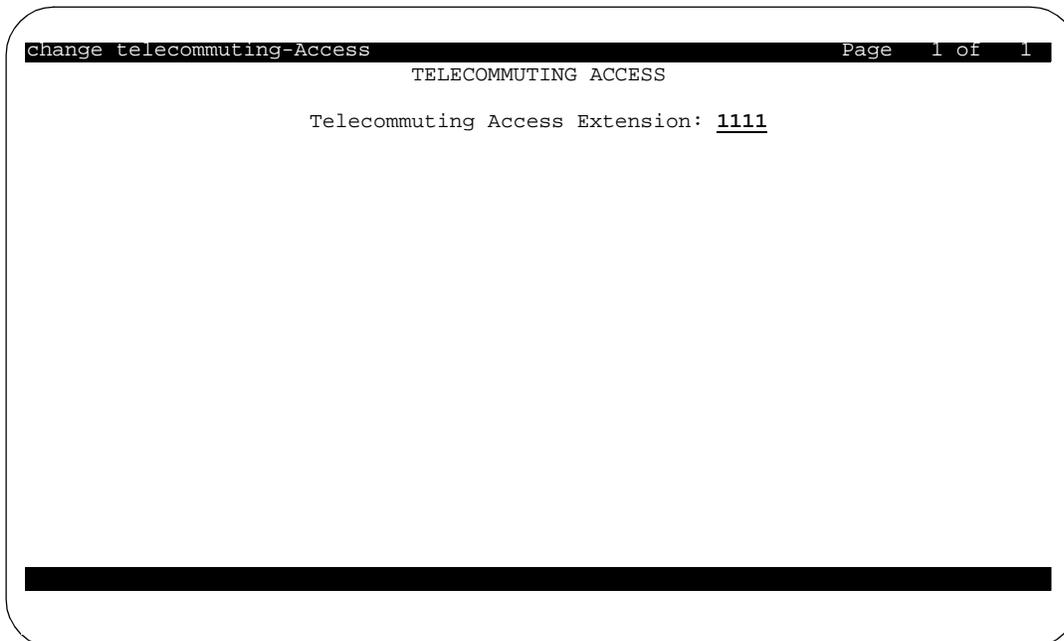
2. In the `Telecommuting Access Number` field, type an extension in accordance with the Dial Plan; for example, **1111**. This is the Avaya EC500 Access Number you provide for users to enable or disable EC500, or to change their Station Security Code. The Telecommuting Access Number must be a direct inward dialing (DID) or a central office (CO) trunk destination for off-premises features to work.

3. Press **Enter** or **Submit**, depending on your terminal.

## Setting Up the Avaya EC500
## Enable/Disable Feature Access Codes

To administer the EC500 Feature Access Codes (EC500 Activation and
Deactivation) for enabling or disabling:

1. Type **change feature-access-codes** and press **Enter**.

    *The Feature Access Code screen appears.*

2. Press **Next Page** to advance to page 2.

**Figure 3-9.    Feature Access Screen**

```
change feature-access-codes                              Page   2 of   5
                        FEATURE ACCESS CODE (FAC)


           Emergency Access to Attendant Code: *11
                    Enhanced EC500 Activation: *81          Deactivation: #81
          Extended Call Fwd Activate Busy D/A: *23  All: *24 Deactivation: #23
          Extended Group Call Pickup Access Code:
                 Facility Test Calls Access Code:
                              Flash Access Code: *88
             Group Control Restrict Activation: *15          Deactivation: #15
                  Hunt Group Busy Activation: *81          Deactivation: #81
                            ISDN Access Code:
                Last Number Dialed Access Code: *54
      Leave Word Calling Massage Retrieval Lock: *45
    Leave Word Calling Massage Retrieval Unlock: #45
            Leave Word Calling Send A Message: *60
           Leave Word Calling Cancel A Message: #60
               Malicious Call Trace Activation:                 Deactivation:
  PASTE (Display PBX data on Phone) Access Code:
    Personal Station Access (PSA) Associate Code:          Dissociate Code:
          Per Call CPN Blocking Code Access Code:
         Per Call CPN Unblocking Code Access Code:
                    Print Messages Access Code: *65
```

3. Set an access code in accordance with your Dial Plan for the following
   fields.

   - Enhanced EC500 Activation - **\*81** in this example

   - Enhanced EC500 Deactivation - **#81** in this example

4. Press **Enter** or **Submit**, depending on your terminal.

# Voice Mail Administration

Unanswered office number calls are usually routed to a user's Corporate voice mail after a pre-determined number of rings, but many Cellular Service Providers also offer voice messaging. As an Administrator, you may be called upon to troubleshoot individual situations to help the user understand the options and the potential conflicts resulting from a voice mail preference.

The key action you can take to assist the user is to coordinate a default to a specific voice mail system by setting the number of rings on the office number before the Corporate voice mail answers so that the preferred system picks up unanswered calls before the other system. This section provides procedures for you to use when working with the users.

It is important to note that there are coverage options in both the DEFINITY or Avaya Communications Server running MultiVantage software (busy, active, send-all-calls) and the network (cell phone unavailable, network congested) that can cause a call to immediately go to the respective voice mail. Users should recognize that despite efforts to allow their preferred voice messaging system to pick up calls before the other system does, an unanswered call could sometimes result in a message in *either* system's voice mailbox.

## Using Corporate Voice Mail to Receive Messages

To receive voice messages through the Corporate voice messaging system, the Cellular Service Provider's voice mail feature must be set to ring longer than the Corporate voice messaging system does. For example, if the Corporate voice messaging system automatically picks up an unanswered call on the third ring, the user should set the cell phone's voice mail system to pick up unanswered calls on the fourth or fifth ring. This is to facilitate that the Corporate voice messaging system will pick up all unanswered calls before the Cellular voice mail system does.

If the user cannot set the number of rings on the cell phone by themselves, he or she should contact the Cellular Service Provider for assistance. The user should request at least one more ring than his or her office number to ensure that the Corporate voice messaging system picks up messages.

> **NOTE:**
> If the user is using the cell phone exclusively for business purposes, he or she can request that Cellular voice mail be turned off (disabled) by the Service Provider.

If you wish to change the number of rings on the office number as part of the solution, type **change coverage path n** on the System Administration Terminal and modify the values in the `Number of Rings` field.

## Preventing Messages from Automatically Going to Cellular Voice Mail

Most Cellular Service Providers route calls automatically to their own voice mail systems when a cell phone is turned off or in an out-of-coverage area.

To prevent work-related calls from being automatically routed to the users' Cellular voice mail system, tell users that they must disable EC500 before shutting down their cell phone. Incoming calls to their office number will then be routed to the Corporate voice messaging system, while personal calls will continue to be picked up by their Cellular voice mail system.

## "Notify Me" under Unified Messenger® for MS Exchange

If users have access to the "Notify Me" feature of Unified Messenger for Microsoft Exchange (Version 4.0 or later), they are notified of messages in their Corporate voice mailbox via their cell phone's display. For more information on using this feature see "Setting Notify Me" in the *Unified Messenger Telephone User Interface Online Guide,* accessed via:

http://support.avaya.com

**➡ NOTE:**
The cell phone must support text messaging to use this feature.

## Changing Configuration Sets

A Configuration Set defines a number of call treatment options for EC500 cell phone calls. The administration for EC500 allows for the use of up to 10 Configuration Sets, which are already defined in the system using default values. Each set is administered on a different screen.

The key field is the `Calling Number Style`, which can be set to **pbx**, allowing a cell phone caller ID display of less than 10-digits or `network`, allowing a display of only 10-digit numbers. Since there are ten Configuration Sets available, multiple combinations of the options can be administered, thus accommodating requirements for a variety of Cellular Service Providers.

To customize a Configuration Set,

1. Type ***change xmobile configuration-set n*** (where n = 1 to 10) and press **Enter**.

   *The Configuration Set screen appears.*

**Figure 3-10.   Configuration Set Screen**
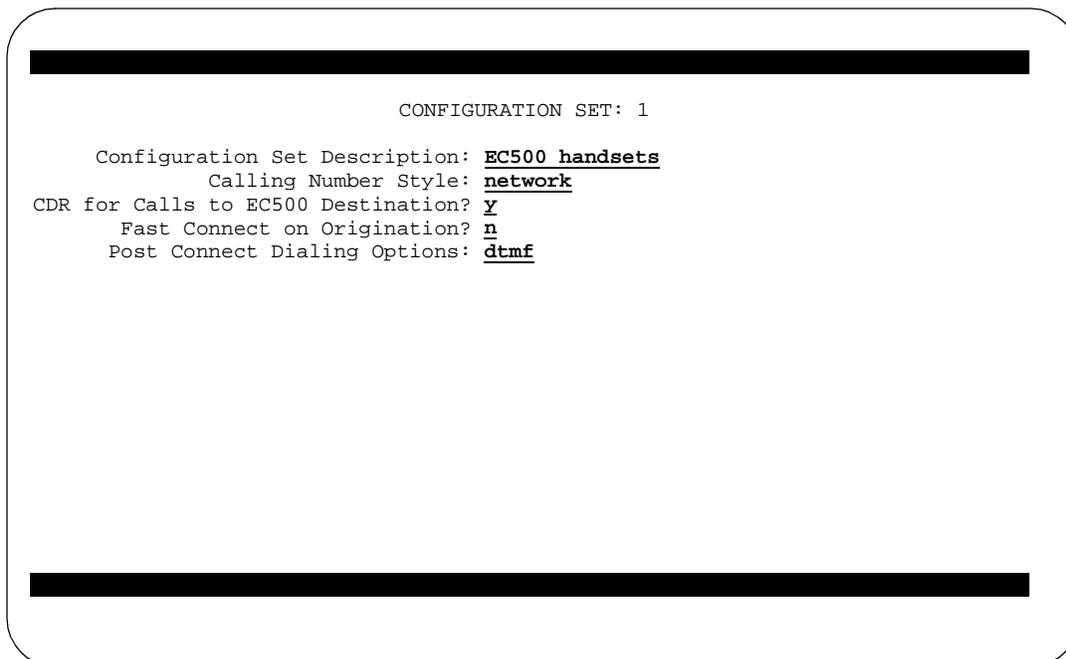
```
                         CONFIGURATION SET: 1

     Configuration Set Description: EC500 handsets
             Calling Number Style: network
CDR for Calls to EC500 Destination? y
       Fast Connect on Origination? n
      Post Connect Dialing Options: dtmf
```

2. Enter the following fields with the appropriate values:

   ■ `Configuration Set Description` - up to 20 characters, free-form text. Use this to describe the purpose of the configuration set, for example, "EC500 handsets."

- `Calling Number Style` - determines the format of the caller ID for calls from a local switch extension to an EC500 cell phone. Using the default value, `network`, causes the system to utilize the 10-digit calling identification information established on the ISDN public-unknown numbering screen. See "Sending 10-digit Caller Identification for Locally Originated Calls" in this chapter.

- `CDR for Calls to EC500 Destination` - When the option is y, an outgoing trunk CDR report will be created for each EC500 call, if the selected trunk has the CDR option enabled. The originating extension of the call will be the principal desk set to which the EC500 XMOBILE station is bridged, or the XMOBILE station itself, if standalone. All EC500 CDR reports will have an account code consisting of all eights (for example, 8888) up to the maximum administered length of the CDR Account Code. For additional information on Call Detail Recording, see *Avaya Administrator's Guide for Avaya MultiVantage*$^{TM}$ *Software,* Document Number 555-233-506.

    - Type **y** to track calls to cell phones for reporting or billing purposes.

        If you type **y**, the configuration set administered on the XMOBILE station screen determines whether a CDR record is generated.

    - Type **n** if you want to treat the EC500-administered cell phones as totally internal stations and CDR reporting is not desirable.

        If you type **n**, and the XMOBILE extension is stand-alone, you must enter it on the Intra-Switch CDR screen in order to get CDR reports. These will not show any trunk information.

    If the XMOBILE or the principal (in a bridging scenario) is being tracked in the Intra-Switch CDR report, a CDR record is generated for the station-side of the call (the CDR record contains the calling and called parties). This is in addition to the CDR report for the EC500 call if the `CDR for Calls to the EC500 Destination` field on the Configuration Set screen is **y**. Thus two CDR reports may be generated for each EC500 call; the trunk CDR record containing the cell phone number and the principal and the intra-switch CDR record containing the principal and the original calling party. Note that in the case of a standalone EC500 cell phone, its XMOBILE station number will be the principal; if it is bridged to another station, then that station's number will be the principal. See Table 3-1 for additional information.

- `Fast Connect on Origination` - determines whether some additional processing will occur on the switch prior to connecting a call. This option may be utilized in the future for capabilities provided by the cell phone provider. Currently the default value of `n` is recommended.

■ `Post Connect Dialing Options` - determines whether additional capabilities, beyond standard ISDN dialing, are available for those incoming ISDN trunk calls that are mapped into XMOBILE stations. Use the default value, `dtmf` (Dual Tone Multiple Frequencies).

3. Press Enter or Submit, depending on your terminal.

4. As needed, use the **change xmobile configuration-set n** command to change more Configuration Sets.

**Table 3-1. CDR Output for EC500 Calls**

| CDR Report field on the Trunk Group screen | CDR for Calls to EC500 Destination? field on the Configuration Set screen | XMOBILE (or Principal in bridging set-up) in the Intra-Switch CDR screen | Type of CDR records (Trunk or Intra-switch) | Contents of Interest |
|---|---|---|---|---|
| Yes | Yes | No | Trunk CDR record | Cell phone number + XMOBILE/principal + EC500 ID |
| Yes | Yes | Yes | 2 CDR records (Trunk and Intra) | Cell phone number + XMOBILE/principal + EC500 ID<br><br>XMOBILE/Principal + calling party |
| Yes | No | No | No CDR | N/A |
| Yes | No | Yes | Intra CDR record | XMOBILE/principal + calling party |
| No | Yes | No | No CDR | N/A |
| No | Yes | Yes | Intra CDR record | XMOBILE/principal + calling party |
| No | No | No | No CDR | N/A |
| No | No | Yes | Intra CDR record | XMOBILE/principal + calling party |

**Generating Two CDR Records**

To generate two CDR records:

1. Type **change system-parameters cdr** and press **Return**.

   The CDR System Parameters screen displays.

2. In the `Intra-Switch CDR` field to **y**.

3. Press **Enter** or **Submit** to save your changes.

4. Log off and log back into the switch.

5. Type **change intra-switch-cdr** and press **Return**.

   The Intra-Switch CDR screen displays.

6. Enter any extension you want to track with this screen.

7. Press **Enter** or **Submit** to save your changes.

## Creating a Change Feature Access Code
## for Station Security Codes (SSC)

When users are enabling and disabling EC500, they need to know the Station Security Code associated with their office number. You must be sure to administer these Station Security Codes for the principal EC500 office numbers.

EC500 provides the capability for users to enable or disable all bridged extensions at once, using the Security Code for their principal phone (an office number or an AWOH extension set up on the DEFINITY or Avaya Communications Server running MultiVantage software).

Station Security Codes provide security to station users by preventing other users from accessing functions associated with the user's station. Each station user can change his or her own SSC if the user knows the station's current settings. You must create a system-wide SSC change Feature Access Code (FAC) that users can invoke to change their SSC. You must also administer and provide their individual SSCs to users. A user cannot change a blank SSC.

To create a system-wide SSC change Feature Access Code (FAC) at the System Administration Terminal:

1. Type *change feature-access-codes* and press **Enter**.

   *The Feature Access Code screen appears.*

2. Press **Next Page**.

   *The Feature Access Code screen page 2 appears.*

3. Type a code valid for your Dial Plan (i.e. #5) in the `Station Security Code Change Access Code` field. This sets the access codes for this feature.

4. Press **Enter** or **Submit**, depending on your terminal.

   *The Command prompt appears.*

5. Type *change system-parameters security* and press **Enter**.

   *The Security-Related System Parameters screen appears.*

6. Press **Next Page** to advance to page 2 of the Security-Related System Parameters screen.

7. Type a number in the `Minimum Station Security Code Length` field that is based on your Dial Plan and press **Enter**. This determines the minimum required length of the Station Security Code. Longer codes are more secure.

# Installation and Administration Test

4

## Introduction

Once EC500 has been administered, use the installation test procedures in this chapter to ensure that the EC500 solution performs as expected. The EC500 installation test and customer acceptance procedures follow the same guidelines used for testing a new station added to the switch. However, a review of the basic test procedures is provided in this chapter.

## Test Procedures

When performing these tests, it may be necessary to place several calls to the cell phone.

1. Using a Touch Tone telephone, dial the number of the user's office phone number - to ensure simultaneous ringing of the user's office number and EC500 cell phone.

2. Once the cell phone begins to ring, check the following:

   ■ Check the cell phone's display panel to ensure 10 digit ANI is passed.

   ■ Do not answer the call, but do verify that the call covers to the user's primary voice mail account (usually the Corporate office voice mail box). If the call doesn't cover properly, the Avaya installation team, or technician, needs to review the coverage path number of rings and setup for corporate voice mail coverage. It also may be necessary to experiment with the number of rings set at the Cellular Service Provider and in the office number coverage path to get the desired voice mail coverage. See "Call Waiting, Call Identification, and Voice Mail", in Chapter 3.

3. To test whether the cell phone's second call appearance is in service, follow these steps:

- Using a Touch Tone telephone, dial the user's office phone number.

- Begin your "test" conversation by answering the call ringing on the cell phone.

- With the test conversation in place and active, place another call to the user's primary extension. The call should ring at the second call appearance on the private extension, as well as at the cell phone. Also, the cell phone's display screen should show the second incoming call. Using the Service Provider's call waiting feature, answer the second call.

If any of the test procedures fail, depending on the problem encountered, the installation team needs to double check that all administration entries were input correctly. If they are administered correctly, see Chapter 6, "Troubleshooting", for further problem resolution procedures.

# Maintenance

# 5

## Introduction

This chapter provides procedures for using a variety of maintenance tools to manage and support your EC500 implementation. Information is also provided on Display Error/Alarms and System Restarts.

Key maintenance tools are:

- Display Capacities - the ability to display the number of used and unused XMOBILE stations, as well as the number of XMOBILE stations assigned to any particular type (EC500, DECT, or PHS).

- List XMOBILE by Cell Phone Number - the ability to list EC500 XMOBILE stations by complete or partial cell phone number(s).

- Busy out and release - capabilities for managing the in-service and out-service state of XMOBILE stations.

- Status Station - fields that shows EC500 enabled or disabled status.

When EC500 XMOBILE stations are active on a call no maintenance testing is performed, although a hardware connection exists along the ISDN-PRI or H.323 IP port and the trunk media to the cell phone system.

## Display Capacities

The administration to display system capacities for XMOBILE stations is performed on page 8 of the System Capacities screen. EC500-related information that you can view is:

- The number of administered XMOBILE stations.

- The number of unadministered XMOBILE stations.

- The number of XMOBILE stations assigned to DECT, PHS, or EC500 XMOBILE types.

- The number of XMOBILE stations.

The sum of DECT, PHS, and EC500 will equal the number of XMOBILE stations used.

To display XMOBILE station usage information:

1. Type **display capacity ['print' or 'schedule']** and press **Enter**.

   *The System Capacity screen, page 1, appears.*

2. Press **Next Page** until you reach System Capacity, page 8.

   *The System Capacity screen, page 8, appears, displaying XMOBILE Station usage.*

**Figure 5-1.    System Capacity Screen**

```
display capacity                                          Page    8 of 10


                                SYSTEM CAPACITY

          TOTAL SUBSCRIBED PORTS
                                                                 System
                                                    Used Available  Limit
                                                    -----------------------
                          Station and Trunk Ports:   305    195     500
                                Radio Controllers:    47      3      50
                                Wireless Terminals:   55      0      55
                                 XMOBILE Stations:     1      9      10
                                            EC500:     1
                                             DECT:     0
                                              PHS:     0
          SYSTEM-WIDE REGISTRATION COUNTS

                                       Currently               System
                                       Registered   Available   Limit
                          IP Stations:      2          198       200
                 IP Attendant Consoles:      0           0         0
              Remote Office Stations:       0           0         0
```

# List XMOBILE by Cell Phone Number

EC500 allows for administering multiple XMOBILE stations to the same Cell Phone Number. These mappings are administered on the individual XMOBILE station screens. A list report allows the administrator to list all XMOBILE stations associated with the same Cell Phone Number. Included in the report will be the XMOBILE station extension, Mobility Trunk Group, Configuration Set, principal extension for bridged XMOBILEs, Mapping Mode, and Calls Allowed, all of which are administered on the XMOBILE station screens.

To display the cell phone list:

1. Type **list xmobile mapping <Cell Phone Number>** where Cell Phone Number can be entered with one of the following options:

   - **<Cell Phone Number>** - up to 15 digits, for one Cell Phone Number. This provides a list of all XMOBILE stations associated with this particular cell phone number. Use only the value from the `Cell Phone Number` field on the XMOBILE Station administration screen. Do not include the Dial Prefix.

   - **<partial string*>** - partial string of a Cell Phone Number followed by the wildcard * (asterisk). This provides a list of all Cell Phone Numbers that begin with the partial string, along with their associated XMOBILE stations. This function is useful when searching for all numbers in a particular area code.

   - **<all>** - This provides a list of all EC500 administered Cell Phone Numbers, along with their associated XMOBILE stations.

   In this example, the command used is **list xmobile mapping <7325551212>**.

2. Press Enter.

*The XMOBILE Station to Cell Phone Mappings screen appears.*

**Figure 5-2.    XMOBILE Station to Cell Phone Mappings Screen**

```
list xmobile mapping 7325551212


                 XMOBILE STATION TO CELL PHONE MAPPING

                         Mobility
 XMOBILE   Cell Phone    Config  Trunk    Mapping        Principal   Calls
 Ext.      Number        Set     Group    Mode           Extension   Allowed

 30007     7325551212    1       ars      termination    31417       all
 30008     7325551212    1       ars      termination                internal
```

The last extension shown above has no principal extension because it is
for a non-bridged or stand-alone mode.

# XMOBILE Station Maintenance (Busy Out and Release)

Regardless of the in-use state of an XMOBILE station, maintenance commands to busy out and release the XMOBILE stations can be issued by authorized System Administrators on the DEFINITY or Avaya Communications Server running MultiVantage software running System Administration Terminal.

The following are the principal uses of the busy out and release maintenance commands:

1. If an EC500 XMOBILE station hangs in an error state that cannot be cleared by ending the call with the 'end call' button on the cellular handset, the System Administrator must issue the **busyout station <XMOBILE extension>** command followed by the **release station <XMOBILE extension>** command.

   This resets and clears all associated switch resources and drops the connection between the switch and the handset.

2. The System Technician/Administrator is able to release any previously busied out XMOBILE station using the **release station <XMOBILE extension>**. The service state of the XMOBILE station is then restored to In-Service.

3. If a mapped cell phone becomes lost or stolen, the System Administrator can issue the **busyout station <XMOBILE extension>** to all associated XMOBILE extensions to prevent unauthorized access to the DEFINITY or Avaya Communications Server running MultiVantage software. This is a temporary solution since translation reload results in clearing the busied out service state and makes the cell phone available. In addition, the System Administrator should disable EC500 for the station. See Chapter 6, "Troubleshooting" for further information.

The XMOBILE station busy out command on the System Administration Terminal is available to System Technicians and Administrators. When successfully issued, the following conditions exist for the busied out XMOBILE station:

- No new incoming calls are delivered to the cell phone via the switch. It does not affect the operation of the cell phone with regard to incoming calls from its Service Provider.

- If you have an EC500 cell phone which sends office caller ID, and that station is busied out, then any calls into the switch are immediately disconnected.

- All existing connections that exist over the links associated with the business connection are torn down and the connected parties dropped from their call.

- The service state is set to Out-Of-Service on the **status station** screen.

Busied out XMOBILE service states are not retained across planned SPE interchanges on DEFINITY R only.

Busied out XMOBILE service states are not retained after severe system restarts (levels 3, 4, and 5).

The EC500 state is not impacted by the busy out and release commands. If enabled or disabled, it stays in that state regardless of the busy out state.

## Command Descriptions

### busyout station <XMOBILE station extension>

The busyout maintenance command puts the XMOBILE station into an "out-of-service" state and clears all switch resources used by the XMOBILE station, making the mapped cell phone unavailable to receive incoming calls from the DEFINITY or Avaya Communications Server running MultiVantage software.

When the service state of an XMOBILE station changes from In-Service to Out-of-Service, error type 18 is logged in the error log against the XMOBILE station and a warning alarm is raised and logged in the alarm log. Once busied out, all subsequent requests to busy out the XMOBILE station are aborted.

### release station <XMOBILE extension>

The release maintenance command puts the XMOBILE station into an "in-service" state, making it available for incoming calls. The warning alarm for the previously busied out station is cleared.

When the service state of an XMOBILE station changes from Out-of-Service to In-Service, error type 18 is removed from the error log and the warning alarm is removed from the alarm log. Once released, all subsequent requests to release the XMOBILE station are aborted. The mapped cell phone is now available to receive incoming EC500 calls.

## Display Errors/Alarms

LED's are not used to indicate the service state of XMOBILE stations because no circuit pack is associated with an XMOBILE station. No visual change is observed on the mapped cell phone when the XMOBILE station for that set is busied out.

The **display errors and display alarms** maintenance commands on the System Administration Terminal show the errors and alarms logged against busied out XMOBILE stations.

# System Restarts

The current service state for an XMOBILE station is preserved for system restarts at levels 1 and 2.

XMOBILE station service states are not saved for system restart levels 3, 4, and 5 and the service state for all administered XMOBILE stations is reset to the In-Service state after the switch is successfully rebooted following the restarts.

# Status Station Command

**status station <XMOBILE extension>**

The **status station** maintenance command is used to view the service state of the XMOBILE station.

The EC500 state is shown on the status station **<XMOBILE extension>** screen.

- When EC500 is disabled **\*\*** (two asterisks) are displayed in the `CF Destination Ext:` field and the `EC500 status` field displays the value **disabled.**

  ➡ **NOTE:**
  The ** are shown only for bridged XMOBILE extensions. If using the EC500 with the UCC Scheduler to disable the XMOBILE, then you will see the primary extension number instead of the **.

- When EC500 is enabled, the `CF Destination Ext:` field is blank and the `EC500 status` field displays the value **enabled**.

- When a new EC500 XMOBILE station is added, the station comes up in the disabled state.

# Troubleshooting

# 6

## Introduction

This chapter describes problems that may occur during operation of the EC500 solution and possible ways of resolving these problems.

## Error Conditions

Most problems reported by users of EC500 are likely not to be problems with EC500 itself. In most cases, they are caused by unexpected interaction between the Cellular Service Provider and EC500 features.

Below is a recommended troubleshooting procedure to follow when users cannot receive EC500 calls on their cell phones. In addition, Table 6-1 identifies other possible problems that might be encountered during operation of EC500. See "Installation and Administration Test", for test procedures to verify the connection to the cell phone.

### Users Cannot Receive EC500 Calls on Cell Phone

If an EC500 user is not able to receive EC500 calls on the cell phones, follow these procedures in the suggested order to isolate and fix the problem. After each step, you may want to verify that the problem has been fixed by making an EC500 call to the mapped cell phone.

1. Verify that you can call the cell phone from the switch. This also verifies that the user's service contract with the Cellular Service Provider (CSP) is active, and that the user gets good coverage in that area.

   Check this by making a direct call to the cell phone's published number. When making this test call, wait until the call rings the cell phone (which verifies that there is coverage), or until the call goes to the CSP's voice mail (which verifies that the service is provided but there may not be good coverage).

2. Use the **status station** command for the principal number that the XMOBILE is bridged to and verify that SAC or Call Forwarding has not been activated on the principal extension.

3. For the XMOBILE extension, use the **status station *<XMOBILE extension>*** command to check the following:

    ■ The service state is "in service/idle." If not, use the **release *<XMOBILE extension>*** command to put it back in the active state.

    ■ The EC500 state is enabled on the Status Station screen. If EC500 is disabled, ask the user to enable EC500 for the principal office number.

4. On the XMOBILE Station screen verify that the entries in the `Mobility Trunk Group, Dial Prefix, Calls Allowed,` and `Cell Phone Number` fields are correct as specified in Administration.

5. Check the ARS Analysis table and make sure that there is an entry to route the cell phone number over an ISDN trunk on the switch.

6. If the Mobility Trunk Group is **ars** or **aar**, then verify that no Feature Access Code (for example, 9) is included in the cell phone number field.

7. A **list ars route-chosen 1234567890** maintenance command can be used to see what routing is used to route the call (where 1234567890 is a 10-digit cell phone number).

If the problem cannot be corrected by following the above procedure, escalate the issue to an Avaya technician. In addition to the checks listed above, verify with the technician that the EC500 XMOBILE station is not restricted from receiving incoming calls.

**Table 6-1.    Error Conditions in the Operation of EC500**

| Situation | Possible Cause(s) | Suggested Action or Resolution |
|---|---|---|
| Users cannot receive EC500 calls on their cell phones. | See the procedure at the beginning of this chapter, "Users Cannot Receive EC500 Calls on Cell Phone" for detailed information on possible sources of the problem. | See the procedure at the beginning of this chapter, "Users Cannot Receive EC500 Calls on Cell Phone" for detailed instructions on troubleshooting this problem. |
| The user reports that all calls go directly to the cellular voice mail, but the cell phone is on and working fine. | Both XMOBILE extensions may be bridged to the same line appearance on the principal phone. | Make sure that both XMOBILE extensions are not bridged to the same line appearance on the principal phone. |
| When running the **list xmobile mapping** command, XMOBILEs that you know are administered do not appear. | The cell phone number has not been administered on the Station form, but in the ARS tables instead. | Change the XMOBILE Station screen administration to include the cell phone number. |
|  | The number (or number plus *) used to match the cell phone number includes the dial prefix. | Don't include the dial prefix. |
| No CDR for EC500 calls | The Configuration Set for the user's XMOBILE station has the CDR for Calls to EC500 Destination field set to **n**. The XMOBILE station is still using loopback trunks. The CDR Reports option on the trunk being used is **n**. | Check administration of Configuration Set, XMOBILE station, or trunk group and change if necessary. |

*Continued on next page*

**Table 6-1.   Error Conditions in the Operation of EC500  —** *Continued*

| Situation | Possible Cause(s) | Suggested Action or Resolution |
|---|---|---|
| The user reports that voice mail messages are not going to the mailbox of choice. | Incoming calls to an office number are usually routed to the resident AUDIX voice mail after a pre-determined number of rings. For cell phone calls, the same functionality exists from the Service Provider. At this time there is no way to coordinate the two different voice mail systems using EC500. | It is possible to set up the number of rings before coverage answers so that one or the other voice mail systems always answers first. (The user may need to contact the Cellular Service Provider to change the number of rings at the cell phone.) However, there are coverage options in both the DEFINITY or Avaya Communications Server running MultiVantage software (busy, active, send-all-calls) and the network (cell phone unavailable, network congested) that cause a call to immediately go to the respective voice mail. Users should realize that an unanswered call could result in a voice mail message in either mailbox. |
| The user reports that he or she is missing calls at the office number because the cell phone voice mail is picking up the call instead. | The user has turned off the cell phone or the phone is in an out-of-coverage state. When this is the case, Service Providers usually have the calls routed to voice mail automatically. There is no way to control this with EC500. | It is recommended that EC500 be disabled prior to entering an out-of-coverage area or turning off the cell phone so that the user can pick up the call on the office number or the Corporate voice mail is allowed to answer the calls. |
| | Both XMOBILEs are bridged to the same line appearance on the principal extension. | Check that the first XMOBILE is bridged to the first line appearance and the second XMOBILE is bridged to the second line appearance. |

**Table 6-1. Error Conditions in the Operation of EC500 — *Continued***

| Situation | Possible Cause(s) | Suggested Action or Resolution |
|---|---|---|
| The user reports that the cell phone is not receiving caller identification numbers for calls from the DEFINITY or Avaya Communications Server running MultiVantage software, while the office number that the cell phone is bridged to does. | The DEFINITY or Avaya Communications Server running MultiVantage software has not been administered properly for sending 10-digit caller identification numbers. Most Service Providers require a 10-digit number. | Recheck the outbound trunk screen to make sure the `Send Calling` field is set to **yes**. |
| | External trunks serving the cell phone are using a non-ISDN trunk. | Change the routing administration to route over an ISDN trunk. |
| The user reports that the person being calling is receiving the incorrect caller ID. | The Configuration Set screen has the `Calling Number Style` field set to **PBX**. | Change the `Calling Number Style` field on the Configuration Set screen to **network**. |
| | There is an incorrect entry on the ISDN public-unknown numbering screen. | Verify that the entries on the ISDN public-unknown numbering screen are correct. |
| The user reports that the cell phone is receiving a switch default caller identification number for calls from the DEFINITY or Avaya Communications Server running MultiVantage software. | The ISDN Service Provider (SP) is replacing the caller identification with a fixed caller ID. | Escalate the issue to your Telecom Manager who may contact your ISDN SP to request that this be fixed or find an alternate ISDN SP that allows the caller identification to pass. |
| | The switch is blocking the outgoing caller identification and is passing a default caller ID. | Change your switch administration to allow caller identification to go outside the switch. |

*Continued on next page*

**Table 6-1. Error Conditions in the Operation of EC500 — *Continued***

| Situation | Possible Cause(s) | Suggested Action or Resolution |
|---|---|---|
| The user hears a beep while on a call originating from the DEFINITY or Avaya Communications Server running MultiVantage software, but is not able to use the call waiting feature on the cell phone to switch to the other call. | Most likely the user is hearing the tone provided by the DEFINITY or Avaya Communications Server running MultiVantage software when call waiting is enabled at the switch. | You have two possibilities: 1) communicate to the user that when a call waiting indication is heard, but the user can't switch the call, he or she needs to hang up on the first call in order to receive the call, OR 2) disable call waiting at the switch level and the regular call waiting capability provided by the Cellular Service Provider then handles the call waiting feature. |
| The EC500 cell phone call into the office switch fails to provide the office caller ID. | The `Cell Phone Number` field administered for the EC500 XMOBILE station does not have the required entry. | Enter the full caller ID number in the `Cell Phone Number` field. |
| | The `Mapping Mode` field administered for the EC500 XMOBILE station does not contain **origination** or **both.** | Enter **origination** or **both** in the `Mapping Mode` field. |
| | The external inbound call is not entering into the switch over an ISDN trunk. | Contact the ISDN Service Provider to ensure that inbound calls enter the switch via an ISDN trunk. |
| | The external inbound call does not enter the switch on which the EC500 Cell Phone's XMOBILE station is administered. | Create an XMOBILE station for the EC500 Cell Phone with the proper mapping on the switch that the call enters. |
| | The calling number is manipulated on the inbound trunk screen. | Administer the EC500 XMOBILE station's `Cell Phone Number` field to match the modified calling number. |

*Continued on next page*

**Table 6-1.    Error Conditions in the Operation of EC500  — *Continued***

| Situation | Possible Cause(s) | Suggested Action or Resolution |
|---|---|---|
| | The Cellular Service Provider does not send the calling number. | Call the Cellular Service Provider to allow the caller ID to be sent. |
| | Someone else happened to be on a call at the same time on the user's desk phone and on the same line appearance as the originating EC500 Cell Phone call. | Move the bridged line appearance to a button unlikely to be used by another phone call. |
| The DEFINITY or Avaya Communications Server running MultiVantage software does not allow a default entry of extensions, that is, instead of entering the extension followed by the # key, just entering # alone. | The cell phone number is not properly mapped. | See "The EC500 cell phone call into the office switch fails to provide the office caller ID" above. |
| An intercept tone is received when attempting to Enable/Disable EC500 (that is, enter the Feature Access Code, #, Station Security Code, and #). | The user has used the Station Security Code of the XMOBILE extension and it is different from that of the principal. | The user must enter the code of the principal extension. |
| | The Station Security Code is blank for the principal. | The Station Security Code for the principal must be administered. |

*Continued on next page*

**Table 6-1. Error Conditions in the Operation of EC500 — *Continued***

| Situation | Possible Cause(s) | Suggested Action or Resolution |
|---|---|---|
| When attempting to Enable/Disable EC500, an intercept tone is received. | The XMOBILE Type field administered on the Station screen for the XMOBILE station is not **EC500.** | Change the XMOBILE Type field administered on the Station screen to **EC500.** |
| | The XMOBILE station's XMOBILE Type field is EC500 and Configuration Set is not administered for dtmf. | Access the associated Configuration Set screen and ensure that the entry in the Post Connect Dialing Option field is **dtmf.** |
| The office caller ID is that of the origination mapped EC500 XMOBILE station and not that of the principal extension.<br><br>- | The XMOBILE station is not bridged to the principal. | Bridge the XMOBILE station to the principal extension. |

## Terminal Error Codes

When the service state of an XMOBILE station changes from In-Service to Out-of-Service, error type 18 is logged in the error log against the XMOBILE station and a warning alarm is raised and logged in the alarm log.

When the service state of an XMOBILE station changes from Out-of-Service to In-Service, error type 18 is removed from the error log and the warning alarm is removed from the alarm log.

See "Maintenance" for more information on busy out and release maintenance commands.

# Avaya EC500 - Other Configurations

# A
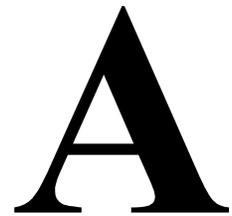
EC500 provides the ability to operate a cellular or other remote phone as a standard, caller ID enabled telephone connected directly to the DEFINITY or Avaya Communications Server running MultiVantage software. Depending on your in-house telephone system and your specific business needs, there may be different setups available for EC500 users. Setups include:

**Standard EC500 (Dual) Setup Administered to Send office caller ID** - This is the most common setup, with two extensions bridged to the office phone for call waiting. The first call appearance (incoming/outgoing line) covers outgoing EC500 calls while the second call appearance is used to send the office caller ID capability.

**Dual Setup not Administered to Send office caller ID** - This setup provides two call appearances (incoming/outgoing lines) for the cell phone and allows the user to use Call Waiting. Therefore, two extensions/lines are bridged to the primary desk phone.

**Single Setup** - This setup provides one line/one EC500 extension (for those users who do not have Call Waiting as part of their cellular service plan). The System Administrator can administer the extension to gain the identity of the office phone.

**Multiple Setup** - Some users may need to bridge their office number to multiple locations -- such as their cell phone and home office number. In a multiple setup, the XMOBILE station associated with each location can be administered to gain the identity of the office phone and send the office caller ID for calls into the principal extension's switch. In this example, five extensions are established, and all are reachable via the primary office number.

- one primary office number extension,
- two EC500 lines to the cell phone (the second line can be answered via your Cellular Service Provider's "call waiting" feature),
- two EC500 lines for the home office or other phone (the second line can be answered via your Service Provider's "call waiting" feature).

**Standalone Setup** - A single cell phone used as a member of a hunt group or coverage group; one extension is administered. This extension can be administered to send an office caller ID.

➡ **NOTE:**

For users who do not require a physical on-site office number, the cell phone can be bridged to an Administration Without Hardware (AWOH) extension. In this way the user still has an enterprise presence for incoming business calls via the cell phone.

In general the installation, administration, and maintenance of these modes are identical to what is described in this guide for the Dual Bridge Mode because the loop trunk administration and XMOBILE station administration use the same procedures.

The following are considerations for these different configurations.

For **Multiple Bridge Mode** the user may want to enable and disable each XMOBILE station extension individually. If so, the user needs to be told the extension number and Security Code of each XMOBILE station.

For **Standalone mode**:

■ A local user wishing to call the XMOBILE station may activate automatic callback towards it. When the cell phone ends its call, the automatic callback feature works normally. (It calls the local user and then the cell phone).

■ If the standalone cellular phone is part of an ACD split or skill, system measurements show that the call has been answered.

■ Although XMOBILE stations may be administered in ACD splits and skills, there is no way to invoke ACD Feature Access Codes from the cell phone. Therefore, the XMOBILE station must be logged in via another means such as:

— Administration of an office number as a bridge of the XMOBILE.

— A computer telephone interface.

— Auto available splits.

■ Use of auto available splits is an option. Note that service observing is not possible using a cell phone.

■ Although an XMOBILE station can be administered for call waiting (independent of the Cellular Service Provider's call waiting capability), use of this is not recommended because of its limitations and potential for confusion to the user. For DEFINITY or Avaya Communications Server running MultiVantage software-based call waiting there is no way to retrieve the waiting call other than ending the current one.

### Enabling/Disabling Individual EC500 Bridged Extensions

Enabling and disabling EC500 is accomplished using EC500 Enable and Disable Feature Access Codes. These and Station Security Codes need to be set through the System Administration Terminal and then communicated to the users. See "Administration" for procedures to set up these Codes).

Using these codes, the typical EC500 user (Dual Bridge Mode) can disable or enable all XMOBILE stations associated with his or her office number at the same time. However, for other configurations, as described in this appendix, users may wish to enable and disable each EC500 extension individually. Note that the initial state of an EC500 administered extension is always disabled.

The typical user will disable and enable all cell phone mapped XMOBILE Stations at once using his or her office number and the Station Security Code associated with that office number. In order to enable and disable individual extensions the user needs to have the extension number and Station Security Code for each cell phone mapped XMOBILE Station.

Individual extensions can be enabled and disabled in the following ways:

- A user wishes to enable or disable the cell phone mapped XMOBILE station at an internal extension. The user enters the following in sequence:

    1. The EC500 Enable Feature Access Code or Disable Feature Access Code.

    2. The extension number of the cell phone mapped XMOBILE Station, followed by **#**.

    3. The Station Security Code assigned to the mapped XMOBILE Station.

    4. A final **#**.

    The user receives either a confirmation or an intercept tone depending upon the success or failure of the procedure.

- A user wishes to enable or disable cell phone mapped XMOBILE stations from any phone in the external network. Whether it's the user's cell phone or another phone does not make a difference in this procedure. The user enters the following in sequence:

    1. The Avaya EC500 Access Number (Telecommuting Access Number). The user should receive a dial tone.

    2. The EC500 Enable Feature Access Code or Disable Feature Access Code.

    3. The extension number of the cell phone mapped XMOBILE Station, followed by **#**.

4. The Station Security Code assigned to the mapped XMOBILE Station.

5. A final **#**.

The user receives either a confirmation or an intercept tone depending upon the success or failure of the procedure.

These procedures must be repeated for each cell phone mapped XMOBILE Station that the user wishes to enable or disable.

# Upgrades from Prior Releases

# B

Release 4 of EC500 is available only with MultiVantage 1.1.2 or later. All of the EC500 releases can be administered and operated concurrently on the same DEFINITY or Avaya Communications Server running MultiVantage software. You can continue to support users with Release 1 through Release 3 as you add users with Release 4, or you may choose to upgrade all users to Release 4.

New capabilities in Release 4 are:

■ ARS and AAR routing of EC500 calls (loopback elimination).

■ EC500 CDR reports.

■ Call Filtering.

## Upgrade from EC500 Release 3

### Loopback Trunk Elimination

The following process is to change the EC500 configuration to work without the loopback trunks. Let's eliminate the loopback connections for station 5462.

Eliminating the loopback trunks is optional and should be accompanied by changing the mobility trunk group field on the XMOBILE Station screen to **ars**.

1. Eliminate the DS1 or IP loopback trunks associated with EC500 Release 2.0 or 3.0. This includes removing the loopback trunks and signaling groups via switch administration as well as physically from the switch.

   Loopback trunk configuration can coexist with the EC500 R4 if you choose to do so. If you decide to eliminate the loopback trunks, the removed equipment can be re-used for other trunking solutions. You can change gradually over to a total loopback elimination. If you decide to have the loopback and non-loopback configurations coexist, you must remember there are capacity restrictions when using the DS1.

2. Type **change station 5462** and press **Return**.

   The *Station* screen for extension 5462 displays.

**Figure B-1.   Station Screen**

```
                              STATION
Extension: 5462            Lock Messages? n                    BCC: 0
     Type: XMOBILE              Security: *                     TN: 1
                          Coverage Path 1:                     COR: 1
     Name: John Doe       Coverage Path 2:                     COS: 1
                          Hunt-to Station:

STATION OPTIONS
             XMOBILE Type: EC500              Message Lamp Ext: 5462
            Display Module? n            Message Waiting Type: NONE

     Mobility Trunk Group: 25
        Configuration Set: 1                     Calls Allowed: all

  CELL PHONE NUMBER MAPPING
             Dial Prefix:
        Cell Phone Number: 732-123-4567
             Mapping Mode: termination
```

3. In the `Mobility Trunk Group` field, type **ars**.

   It should be changed to **ars** for loopback elimination.

4. Press **Enter** to save your changes.

   Things to watch out for:

   If the `Dial Prefix` field contains the ars feature access code, then remove it (for example, 9).

See the see *Avaya Administrator's Guide for Avaya MultiVantage<sup>TM</sup> Software,* Issue 4, May 2002 (Doc Number 555-233-506).

## Upgrade from EC500 Release 2

Implement changes as described for upgrade from EC500 Release 3.

Starting with Release 3, there is a field on the XMOBILE Station screen called `Mapping Mode`. See the "XMOBILE Station Administration" section in Chapter 3 for more information. There is a new command, **list xmobile mapping**, that makes it easy to find out the XMOBILE extensions and primary extension associated with a cell phone number. See the "List XMOBILE by Cell Phone Number" section Chapter 5 for more information. The **status station** command now explicitly shows the EC500 state: enabled or disabled.

To implement office caller ID for an existing EC500 user:

1. Identify the XMOBILE station bridged to the second call appearance of the user's primary extension. The **list bridged-extensions <primary ext>** command provides this information.

2. Change the XMOBILE Station (**change station <xmobile ext>**) and press **Return**.

3. Change the `Mapping Mode` field to **both**.

4. Press **Enter** or **Submit** to save your changes.

> ➡ **NOTE:**
> If the `Cell Phone Number` field contains a dial prefix (such as 1 for long distance), re-administer the cell phone number and place the prefix (for instance, 1) in the `Dial Prefix` field. Also make sure that the full number, including area code, is in the `Cell Phone Number` field. This is necessary for office caller ID to function.

For information on installation and administration of Release 2 of EC500, see *Avaya EC500 Extension to Cellular Installation and Administration Guide,* Issue 2, July, 2001.

## Upgrade from EC500 Release 1

Starting with Release 2, cell phone numbers can be administered on the XMOBILE Station screen. There are three fields related to administration of the cell phone number:

- `Dial Prefix`
- `Cell Phone Number`
- `Mapping Mode`

See the "XMOBILE Station Administration" section for more information. Preexisting XMOBILE stations may continue to use ARS Digit Conversion to convert the XMOBILE extension to a cell number or they may be changed to use the new fields on the Station screen.

To add the cell phone number to an XMOBILE station:

1. Change the XMOBILE station (**change station <xmobile ext>**) and press **Return**.
2. Each dial prefix, if any (for example, 1 for long distance, but not 9 for external access) in the `Dial Prefix` field.
3. Enter the full cell phone number (including area code) in the `Cell Phone Number` field.
4. Enter **termination** in the `Mapping Mode` field (see above for when **both** may be entered).
5. Press **Enter** or **Submit** to save your changes.

Implement changes are described for upgrade from EC500 Release 2.

For information on installation and administration of Release 1 of EC500, see *Avaya EC500 Extension to Cellular Installation/Administration Guide,* Issue 1, February 8, 2001.

# Glossary

## A

**AAR**
See Automatic Alternate Routing.

**ACS**
See DEFINITY or Avaya Communications Server running MultiVantage software.

**Administration Without Hardware (AWOH)**
A station that is administered without a dedicated, physical set.

**ARS**
See Automatic Route Selection.

**ATM-CES**
Asynchronous Transfer Mode - Circuit Emulation Service. This is a trunk capability that supports the equivalent of 8 ISDN interfaces over a single facility. Each interface may have as many as 30 channels.

**Automatic Alternate Routing**
A table-based routing feature used to select a trunk for private network routing. An administered FAC is used to activate the feature.

**Automatic Route Selection**
A table-based routing feature used to select a trunk for public network routing. An administered FAC is used to activate the feature.

**Avaya Communications Server (ACS)**
DEFINITY or Avaya Communications Server running MultiVantage software includes the DEFINITY® ECS and the S8100 Media Server with Avaya G600 Media Gateway.

**Avaya EC500 Access Number**
The Telecommuting Access Number. The number used to dial into the DEFINITY or Avaya Communications Server running MultiVantage software to allow enabling/disabling EC500 and changing the Station Security Code.

**Avaya EC500 Call**
Call to an extension on the DEFINITY or Avaya Communications Server running MultiVantage software (either the principal extension in a bridging scenario, or the XMOBILE station that maps to a cell phone in a standalone scenario) that results in alerting the associated cell phone.

**Avaya EC500 Extension**
The extension number of the XMOBILE on the DEFINITY or Avaya Communications Server running MultiVantage software that maps each line appearance of the office number to the cell phone.

**Avaya EC500 Extension to Cellular**
The feature that allows integration of cell phones under the control of a public cell phone Service Provider with the DEFINITY or Avaya Communications Server running MultiVantage software.

**AWOH**
See Administration without Hardware.

# B

**Basic Rate Interface (BRI)**
A digital message-based protocol intended primarily for the control of advanced telephone sets although it is also used in some countries for trunking.

# C

**Calling Number Style**
The way a caller's identity is displayed to the called party by either a 10-digit number or a pbx extension.

**Class of Restrictions (COR)**
A group of attributes that affect the calling capabilities of stations and trunks.

**Configuration Set**
A set of call treatment options used to customize an XMOBILE station session when placing EC500 calls.

**Corporate Voice Mail**
The voice mail system provided by the user's Telecom Department. Typically this will be AUDIX. There is no current way to coordinate this voice mail with the Service Provider's voice mail.

# D

**DEFINITY**
An Avaya, Inc. telephone system -- referred to as a switch or pbx.

**Dial Prefix**
Any number that might be required for dialing besides the cell phone number itself. For example, 1 for U.S. domestic long distance, or 011 for international cell phone numbers.

**Direct Inward Calling (DID)**
A feature whereby extensions are associated with numbers in the national numbering plan so that they may be directly dialed from outside of the Avaya ECS.

**Disable**
Deactivate EC500 using the EC500 Disable Feature Access Code.

**DTMF**
Dual Tone Multiple Frequency. This is another name for touch-tones which are commonly used for transmitting digits (including * and #) over voice lines.

# E

**EC500**
See Avaya EC500 Extension to Cellular.

**ECLIPS**
Avaya Enterprise Class IP Solutions that include the IP600 Communication Server.

**Enable**
Activate EC500 using the EC500 Enable Feature Access Code.

# F

**Fast Connect on Origination**
Used to determine whether additional processing will occur prior to sending the CONNECT message. This option may be utilized in the future for capabilities provided by the Cell Phone Provider.

**Feature Access Code (FAC)**
A pre-administered dial sequence that performs a feature operation.

# I

**In-Service**
A station has been administered and is in normal operation mode.

**Internet Protocol (IP)**
A suite of information exchanged message sets widely used for data transmission and increasingly used for transmission of voice.

**ISDN Trunk**
This is a trunk (group) that uses a form of message-based signaling (Q.931) over a dedicated control channel. There are different types of ISDN trunks that are distinguished by the type of carrier medium used: PRI/BRI, IP, or ATM-CES.

# M

**Mobility Trunk Group**
A field on the XMOBILE station form containing the group number of the outbound trunk group associated with the XMOBILE stations. All active calls at the XMOBILE station use members of this trunk group.

**MultiVantage**
Product name of the DEFINITY® switching software application.

# O

**Out-of-Service**
The station is out of service due to a busy out action issued by a system technician/system administrator. No calls can be placed or received while in this state.

# P

**PHS (Personal Handy-phone Service)**
This is a widely used standard for mobile telephony in Japan used in public and business offers. It is supported as an X-Mobility special application on the Avaya ECS.

**PRI (Primary Rate Interface)**
A digital message-based protocol intended primarily for the control of advanced digital trunks although it is also used for end points requiring high bandwidth.

**Principal Extension**
In a bridging arrangement, the station whose extension is primary and identifies the entire bridge.

# S

**Service Provider**
A company that supplies cell phone service to a particular area. EC500 is Service Provider independent.

**Station Security Code**
The security code assigned to each station for enabling and disabling EC500. The System Administrator supplies this number.

# T

**Telecommuting Access Number**
The Avaya EC500 Access Number. The number used to dial into the DEFINITY or Avaya Communications Server running MultiVantage software to allow enabling/disabling EC500 and changing the Station Security Code.

**Text Messaging**
A facility provided in many cell phones which allows the user to receive short text messages on the display of the phone. The receipt of the message is often accompanied by an audible alert and the user can then display, delete, or save the message. This facility is sometimes referred to as Short Message Services (SMS).

# U

**UCC**
Unified Communications Center

**Unified Messenger® for MS Exchange**
A software application that consolidates voice, e-mail and fax messages into one mailbox. When combined with EC500, provides a text message via the cell (or other remote) phone's display screen to notify users of messages in their Corporate voice messaging system. Applies only to EC500 users with Unified Messenger's "Notify Me" feature installed on their office phone system.

**User**

    Any person who uses a cell or other remote phone as an EC500 bridge to the Avaya DEFINITY or Avaya Communications Server running MultiVantage software.

# X

**X-Mobility**

    A DEFINITY or Avaya Communications Server running MultiVantage software feature that supports an off-premise extension via an ISDN trunk connection. This feature is built upon the Administration Without Hardware (AWOH) feature. The station type administered is XMOBILE, also called the XMOBILE station.

# Index