

the user's home gateway. In alternate embodiments, the emergency service request message may be received by a visited gateway or by another control facility. Next, the determine location area code and visited gateway step 196 is performed. In step 196, the LAC of the subscriber unit is determined. For example, the LAC may be determined based on the cell in which the subscriber unit is located at the time of the emergency service request. Alternatively, the LAC may be determined by geolocation information. The visited gateway currently servicing the subscriber unit is determined based on the subscriber unit's location.

In the emergency call blocking step 198, the gateway determines whether the subscriber unit may receive emergency services. Emergency services may be blocked, for example, in a country which does not have the infrastructure necessary to provide emergency services. An emergency call may also be blocked in a country where emergency services are restricted.

If there is no emergency call blocking 198, the select telephone number of emergency service center step 200 is performed. In this step 200, the gateway desirably determines the ESC telephone number (or "service center telephone number") of an ESC associated with the particular LAC. This ESC is referred to herein as a "local entity" having a "local entity telephone number". The gateway may also determine an ESC telephone number (referred to herein as a "service provider telephone number") associated with the subscriber unit's service provider. The gateway will determine which of these two numbers will be used by the subscriber unit based on system constraints. For example, a particular country may require that the ESC telephone number associated with the service provider be used before using the ESC telephone number associated with the LAC is used, or visa versa.

In the transmit access approved message step 202, an access approved message is created containing the selected ESC telephone number. The access approved message is then transmitted to the subscriber unit. In an alternate embodiment, the ESC telephone number may be transmitted in a separate message following the access approved message. As used herein, the "access approved message" is one or more messages which convey that access is approved and which contains the ESC telephone number.

After the access approved message is received by the subscriber unit, the initiate emergency call through visited gateway step 204 uses the selected ESC telephone number to set up a call through the visited gateway. In some instances, the visited gateway will be the subscriber's home gateway. The emergency call setup procedure then exits in step 208.

If the emergency call blocking step 198 determines that an emergency call may not be made, the transmit access denied message step 206 creates a message indicating that access to emergency services is denied. The message is then transmitted to the subscriber unit and the procedure exits in step 208.

FIG. 8 illustrates a method for a subscriber unit to establish an emergency call in accordance with a preferred embodiment of the present invention. The subscriber emergency call setup process 220 begins in step 222 by determining whether an emergency call has been requested by the user. For example, a user may request an emergency call by dialing the user-selected emergency number on the keypad or by pressing or setting an indicator on the subscriber unit. When no emergency call has been requested in step 222, the procedure iterates as shown in FIG. 8. In a preferred

embodiment, determination of whether an emergency call has been requested is interrupt driven. If an emergency call has been requested in step 222, the transmit emergency service request message step 222 is performed. This step 224 creates an emergency service request message indicating an emergency situation and transmits the emergency service request message to a gateway.

Next, the access denied message received step 226 determines whether an access denied message has been received by the subscriber unit. If an access denied message has been received in step 226, the procedure exits in step 234. If no access denied message has been received in step 226, the access approved message received step 228 is performed.

This step 228 determines whether an access approved message has been received. If no access approved message is received in step 228, timeout step 230 determines whether a period of time (i.e., a "timeout value") allocated to waiting for an access approved or access denied message has been exceeded. If the timeout value has not been exceeded as determined in step 230, the procedure iterates as shown in FIG. 8. If the timeout value has been exceeded in step 230, the procedure exits in step 234. In a preferred embodiment, receipt of the access denied message or the access approved message, referred to generally as a "returned message", is interrupt driven.

If an access approved message has been received in step 228, the initiate emergency call setup step 232 is performed. In this step 232, the subscriber unit initiates call set up with the ESC associated with the ESC telephone number provided in the access approved message. In an alternate embodiment, step 232 may not be performed, and instead the ESC telephone number may be displayed by the subscriber unit. The procedure then exits in step 234.

In summary, a method and apparatus has been described for determining routing of emergency calls in a cellular communications system which overcomes specific problems and accomplishes certain advantages relative to prior-art methods and mechanisms. The improvements over known technology are significant. Cellular subscribers are able to request emergency services where the telephone number of a local ESC, the user's location, and the native language are unknown.

The foregoing description of the specific embodiments will so fully reveal the general nature of the invention that others can, by applying current knowledge, readily modify or adapt for various applications such specific embodiments without departing from the generic concept and, therefore, such adaptations and modifications should and are intended to be comprehended within the meaning and range of equivalents of the disclosed embodiments. In particular, while a preferred embodiment has been described in terms of requests for emergency service, the method and apparatus of the present invention may be utilized for any type of specialized call request.

It is to be understood that the phraseology or terminology employed herein is for the purpose of description and not of limitation. Accordingly, the invention is intended to embrace all such alternatives, modifications, equivalents and variations as fall within the spirit and broad scope of the appended claims.

What is claimed is:

1. A method for establishing a specialized call comprising the steps of:
 - a) receiving a specialized service request message from a remote communication unit, wherein the specialized service request message indicates that a user of the