

SUMMARY OF THE INVENTION

[0009] An object of the invention is to provide an automated system that would help telephone users select the proper area code for a call.

[0010] A further object of the invention is to provide an automated system for processing telephone numbers that responds to an activation sequence.

[0011] A further object of the invention is to provide an automated system for processing telephone numbers that utilizes identification information associated with the calling party in suggesting proper area codes for a call.

[0012] A further object of the invention is to provide an automated system for processing telephone numbers that utilizes a telephone number database that includes information on the relationship of area code service areas.

[0013] The present invention, as broadly described herein, provides an apparatus for processing telephone numbers that includes an area code processor and a caller interface. The area code processor has means, which are responsive to information about the called party, for producing a list of telephone numbers. The caller interface is in communication with the area code processor and a calling party, and has means for monitoring call initiation signals, means for receiving called party information that is responsive to the monitoring means, and means for selecting a target telephone number from the list of telephone numbers that is responsive to the means for producing a list of telephone numbers.

[0014] In a preferred embodiment of an apparatus of the present invention, the call initiation signals include an activation sequence.

[0015] In a preferred embodiment of an apparatus of the present invention, the receiving means includes means for associating identification information with the calling party.

[0016] In a preferred embodiment of an apparatus of the present invention, the telephone number database comprises information on valid area codes, information on the geographical areas associated with valid area codes, information on valid exchanges within valid area codes, information on geographical areas associated with valid exchanges, and information on the relationship of area code service areas.

[0017] In a preferred embodiment of an apparatus of the present invention, the means for producing a list of telephone numbers includes a database having information on any or all of the following: dialing rules (e.g., rules specifying the conditions requiring a "1" prefix for calls to certain locations, even within a single area code), a calling party dialing list, means for associating identification information, including location information, with the calling party. In preferred embodiments of an apparatus of the present invention, the means for producing a list of telephone numbers is responsive to the information in the database.

[0018] The additional objects and advantages of the invention are set forth in part in the description which follows, and in part are obvious from the description, or may be learned by practice of the invention. The objects and advantages of the invention may also be realized and attained by means of the instrumentalities and combinations particularly set out in the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0019] The accompanying drawings, which are incorporated in and constitute part of the specification, illustrate preferred embodiments of the invention, and together with the description, serve to explain the principles of the invention.

[0020] FIG. 1 is a diagram depicting preferred embodiments of an apparatus for processing telephone numbers.

[0021] FIG. 2 is a flowchart depicting a preferred embodiment of a method for processing telephone numbers.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0022] Reference will now be made in detail to the present preferred embodiments of the invention, examples of which are illustrated in the accompanying drawings.

[0023] FIG. 1 depicts preferred embodiments of an apparatus for processing telephone numbers. A preferred embodiment of the apparatus includes an area code processor and a caller interface. The area code processor has means, responsive to called party information, for producing a list of telephone numbers. The caller interface is in communication with the calling party and the area code processor, and has means for monitoring call initiation signals, means that are responsive to the monitoring means for receiving called party information, and means that are responsive to the producing means for selecting a target telephone number from the list of telephone numbers. A further preferred embodiment of the apparatus includes a call generator as well as the area code processor and the caller interface. The call generator has means for initiating a call to the target telephone number, and is responsive to the selecting means.

[0024] Preferred embodiments of the apparatus for processing telephone numbers of the present invention may be implemented in hardware, in software on general or special-purpose computer systems, or in a combination of hardware and software. These preferred embodiments may be integrated into a subscriber telephone unit, implemented as a stand-alone device connected to the subscriber's telephone line (including wireless, cable-TV lines, and other modes of telecommunication), implemented as a utility on a personal computer that may or may not be connected to the Internet or to a telephone line, or implemented as part of the telephone switching system. For example, in preferred embodiments, the present invention is implemented, as will be apparent to one of skill in the art in view of this specification and the appended claims, by hardware and/or software contained within handheld wireless subscriber telephone units such as mobile phones (including cellular phones). In alternative embodiments, the apparatus may be implemented as is known in the art.

[0025] The present invention may be employed with telephone systems using the North American Numbering Plan (NANP) or with other numbering schemes, including, for example, combinations of such numbering schemes as may be accessed through globally-enabled mobile phones or other subscriber telephone units. The NANP scheme consists of a four-digit subscriber number, a three-digit exchange code, and a three-digit area code. In operation, the present invention attempts to suggest appropriate area codes and exchange codes when presented with a subscriber