

of telephone numbers. The called party information is information provided by Calling Party **180** concerning the desired called party in a telephone call. The called party information may include a subscriber number alone, the subscriber number in combination with an exchange code, or a subscriber number in combination with an exchange code and an area code.

[0038] In the preferred embodiments depicted in **FIG. 1**, Producer **115** includes telephone number Database **120**. In a preferred embodiment, telephone number Database **120** includes information on valid area codes, information on the geographical areas associated with valid area codes, information on valid exchanges within valid area codes, and information on geographical areas associated with valid exchanges. As used herein in reference to telephone number Database **120**, the word “valid” merely means that a telephone company or NANP Administrator has made the number or area code in question available for service. It does not mean that a particular number is actually in service at a particular time. “Geographical areas” generally refers to political divisions such as cities, towns, suburbs, and regions, but may, in preferred embodiments, refer to geographical coordinates, the geographical coverage of particular cells associated with mobile telephone systems, or to other indicators of spatial location as are known in the art.

[0039] For example, in a preferred embodiment, Database **120** includes international, national, and local dialing rules for selected geographical areas for use in determining the appropriate dialing codes to be used when calling from a particular geographical area, to a particular geographical area, where the called-from and called-to geographical areas are defined by the conventions and structure of the relevant telephone systems in which the call is originated and terminated. In preferred embodiments, a mobile phone or other subscriber telephone unit containing an implementation of the present invention comprises a full set of worldwide dialing rules for use in making calls from any geographical location to any geographical location. In preferred embodiments, a mobile phone or other subscriber telephone unit contains only a subset of the worldwide dialing rules, for example, those dialing rules that are relevant to the geographical areas from and to which the calling party using the mobile phone expects to place calls.

[0040] In preferred embodiments, Database **120** includes telephone numbers accessible by dialing assistance mechanisms such as speed dialers, autodialers, and voice activated dialers, as is known in the art. These telephone numbers are referred to collectively herein as the “calling party dialing list.”

[0041] In a preferred embodiment, Producer **115** includes means, as are known in the art, for updating Database **120**. For example, if the apparatus of the present invention is implemented on a personal computer, then Database **120** may be periodically updated by contacting a dial-up server or a server on the Internet. If the apparatus of the present invention is connected to a public switched telephone network, then Database **120** may be updated by dialing into a special database update site. In preferred embodiments, Database **120** is updated from information transmitted from a telephone network associated with a particular subscriber telephone unit. For example, and in a preferred embodiment, Database **120** is contained in a mobile telephone handset,

and is updated automatically from transmissions from the telephone network associated with the mobile telephone handset. In preferred embodiments, Database **120** is updated in response to a manual request by a user of the present invention. In situations where updating Database **120** is difficult, it may be beneficial to limit the amount of information included in Database **120** to information, such as area codes and exchange codes, that do not change as frequently as, for example, subscriber numbers.

[0042] In response to the called party information, Producer **115** produces, with reference to telephone number Database **120**, a list of telephone numbers. This list of telephone numbers contains only valid telephone numbers, as determined by telephone number Database **120**, that are related to the called party information. For example, if the called party information includes a subscriber number, an exchange code, and an area code, then Producer **115** determines from Database **120**, as is known in the art, if the given area code and exchange code combination is valid. If the combination is valid then the list of telephone numbers produced by Producer **115** includes the given subscriber number, exchange code, and area code, along with information concerning the geographical area or other available information associated with the exchange code and area code combination. The list of telephone numbers and other information is passed by Caller Interface **140** to Calling Party **180**. If the combination is not valid, then this discrepancy is passed to Caller Interface **140** for transmission to Calling Party **180**.

[0043] In a preferred embodiment, telephone number Database **120** additionally includes information on the valid subscriber telephone numbers within valid exchanges. In a preferred embodiment, information concerning subscribers, such as their names, is stored in Database **120** and associated with the valid subscriber telephone numbers. Similarly to the previous example, if the called party information includes a subscriber number, an exchange code, and an area code, then Producer **115** determines from Database **120**, as is known in the art, if the given area code, exchange code, and subscriber number combination is valid and proceeds as in the previous example, where, however, information concerning subscribers, associated with telephone numbers on the list of telephone numbers, could also be made known to Calling Party **180**.

[0044] In a preferred embodiment, telephone number Database **120** additionally includes information on the relationship of area code service areas. In preferred embodiments, this relationship information may indicate the geographic proximity of area code service areas to each other, or may indicate the likelihood that a call to a particular area code service area was, in fact, intended for a different particular area code service area. As an example of the latter, a call to a number in the 301 area code in western Maryland, which includes areas close to Washington, D.C., may have been intended for the 202 area code in Washington, D.C., the 703 area code in northern Virginia which also includes areas close to Washington, D.C., or the 240 area code that overlays the 301 area code. A call to a number in the 301 area code could, however, have been intended for other area codes in the region such as area code 410 in eastern Maryland, the 443 overlay area code of area code 410, area code 302 in Delaware, or area code 717 in Pennsylvania. Two predetermined standards of scope, based on information on the