

relationships between area code service areas, may be created so that certain area codes are designated to be within a predetermined scope of a specific area code, while those and additional area codes may be designated to be within a predetermined expanded-scope of that area code. Continuing the 301 western Maryland area code example, the predetermined scope of the 301 area code could be the 301, 703, 202, and the 240 area codes, while the predetermined expanded scope could be the 301, 703, 202, 240, 410, 443, 302, and 717 area codes. Area codes assigned to wireless service, in whole or in part, may be part of the predetermined scope or the predetermined expanded-scope of a specific area code.

[0045] In a preferred embodiment, at least one pre-designated area code service area is considered to be within the predetermined scope. In a further preferred embodiment, at least one pre-designated area code is a toll-free service access code. In some situations it may be desirable to consider at least one area code service area to be within the predetermined scope of all other area code service areas. For example, if a particular Calling Party **180** very frequently calls a particular area code service area, then it may be desirable to assume that any calls made by that Calling Party **180** may be intended for that particular area code service area. It may also be beneficial to assume that toll-free service access codes have nationwide service areas and are, therefore, within the predetermined scope of each other.

[0046] In preferred embodiments utilizing predetermined scope and predetermined expanded-scope designations, the list of telephone numbers produced by Producer **115** may include valid telephone numbers in area code service areas within a predetermined scope or an predetermined expanded-scope responsive to the called party information. For example, the called party information may include a valid subscriber number, exchange code, and area code for a telephone number ("the called number") in the San Francisco area. Using the predetermined scope designations, the list of telephone numbers presented to Calling Party **180** by Selector **155** would then include the called number, as well as other valid telephone numbers within the predetermined scope of the called number that have the same subscriber number and exchange code as the called number, but different area codes. In this same example, but using the predetermined expanded-scope designations, the list of telephone numbers presented to Calling Party **180** by Selector **155** would include the called number, as well as other valid telephone numbers within the predetermined expanded-scope of the called number that have the same subscriber number and exchange code as the called number. Since the list of telephone numbers presented to Calling Party **180** by Selector **155** in both examples would include geographical information on the area code service areas of each number, Calling Party **180** could determine the most likely telephone number for the called party based on this geographical information.

[0047] Continuing consideration of preferred embodiments that utilize the predetermined scope and predetermined expanded-scope designations, an area code and an exchange code provided in the called party information may not be found to be a valid combination. In this case, the present invention assumes that the exchange code provided is correct and that the area code provided is in the predetermined scope or the predetermined expanded-scope of the

correct area code of the called party. Thus, continuing the example and using the predetermined scope designations, the list of telephone numbers presented to the Calling Party **180** by Selector **155** would not include the called number but would include other valid telephone numbers within the predetermined scope of the called number that have the same subscriber number and exchange code as the called number. Similarly, but using the predetermined expanded-scope designations, the list of telephone numbers would not include the called number but would include other valid telephone numbers within the predetermined expanded-scope of the called number that have the same subscriber number and exchange code as the called number. In a preferred embodiment, when the called number is not found to be valid, Selector **155** provides this information to Calling Party **180** through a separate message, as is known in the art.

[0048] In the above examples, the apparatus of the present invention is able to provide useful information concerning the validity of telephone numbers without any reference to location or other information about Calling Party **180**. The apparatus acquires additional utility, however, when information about Calling Party **180** is known.

[0049] As described above in reference to Receiver **150**, in preferred embodiments, identification information is associated with the calling party, and this identification information includes calling party location information. In a preferred embodiment, the list of telephone numbers includes valid telephone numbers in area code service areas within a predetermined scope responsive to calling party location information. In a further preferred embodiment, the list of telephone numbers includes valid telephone numbers in area code service areas within an predetermined expanded-scope responsive to calling party location information. These preferred embodiments perform in a similar manner to the San Francisco example provided above where, however, the called party information does not include an area code. In these cases, an area code is derived from the calling party location information, as is known in the art, and is used as the area code of the called party. Thus, in preferred embodiments where calling party location information is available and where the called party area code is not provided, the predetermined scope or predetermined expanded-scope is determined with reference to the location of the calling party.

[0050] In a preferred embodiment, the called party information may include a subscriber number but no exchange code or area code. In this situation, the area code and exchange code derived from the calling party location information are added to the called party information, and the called party information is then processed by Producer **115** using predetermined scope and predetermined expanded-scope as described above. In this situation, in an alternative preferred embodiment, Database **120** further comprises information on the relationship of central office exchanges similar to the information on the relationship of area code service areas, and the predetermined scope and predetermined expanded-scope are defined for central office exchanges as well as area codes. In this alternative preferred embodiment, the area code and exchange codes derived from the calling party location information are added to the called party information, and the called party information is