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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : **H04M 15/00**

A2

(11) International Publication Number: **WO 00/02373**

(43) International Publication Date: 13 January 2000 (13.01.00)

(21) International Application Number: PCT/IB99/01135

(22) International Filing Date: 17 June 1999 (17.06.99)

(30) Priority Data:
98401685.7 3 July 1998 (03.07.98) EP

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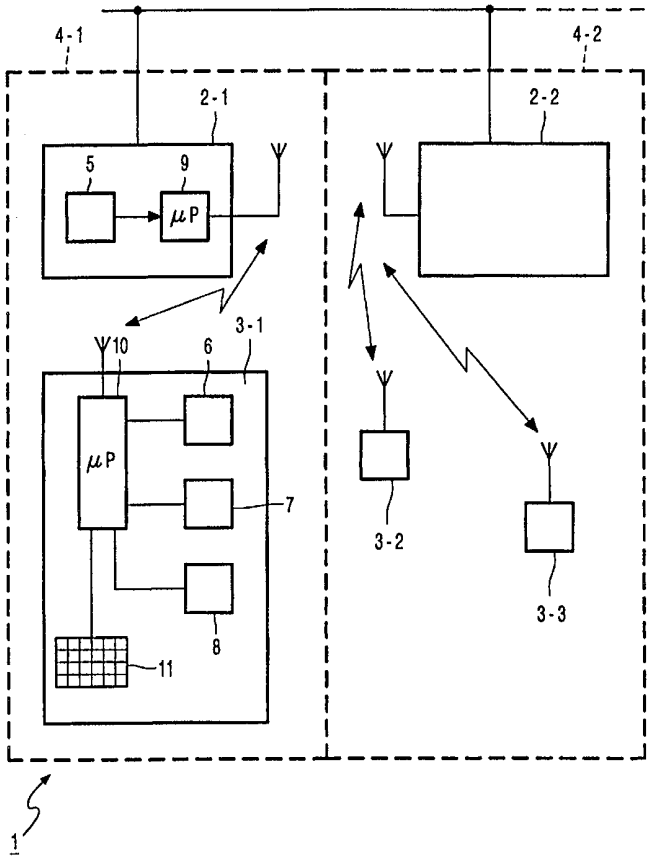
(81) Designated States: CN, JP, KR, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

Published
Without international search report and to be republished upon receipt of that report.

(54) Title: A SYSTEM HAVING TARIFF INFORMATION FEATURES

(57) Abstract

A method and system for providing tariff information to a user in a communication network, comprising a downloading of the tariff information from the communication network to the user, such that the downloading of the tariff information takes place before the making of a regular call by the user. This gives the user tariff information about a telephone call he wants to make prior to the actual making of the call, so that he can plan the call in advance and plan and make it during a period of time telephone charges are at their lowest.



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A system having tariff information features.

The present invention relates to a method for providing tariff information to a user in a communication network, the method comprising a downloading of the tariff information from the communication network to the user.

The present invention also relates to a system comprising one of more base stations and one or more mobile stations for mutual communication between the stations, and means for downloading tariff information from the base station to the mobile station, and to a mobile station and base station for application in the system.

Such a method, system, base station and mobile station are known from EP-A-0 647 055, particularly disclosing a cellular telephone billing management system. The known system is capable of downloading and displaying at the user location cumulative billing information during a call set up-period signalling period, so that the user knows how high the costs are that he can expect at the end of a billing period. Also billing information for a current call can be displayed. The user can be provided with billing information about past and current costs, which information is being downloaded during the setting up of the actual call.

The present invention aims at extending the billing features of the known method and system for opening possibilities for achieving a reduction of telephone costs at the side of the user.

Thereto the method according to the present invention is characterised in that the downloading of the tariff information takes place before the making of a regular call by the user. Similarly the system and mobile station according to the invention are characterised in that they are provided with means for calling a tariff service, which tariff calling means are activated prior to a making of a regular call by the user. And the base station according to the invention is characterised in that it is provided with means for providing tariff information, which tariff information providing means are activated prior to a

making of a regular call by the user. It is an advantage of the present invention that prior to the making of a regular call the user can advantageously be provided with billing information so that he knows in advance which costs are to be expected when he actually makes the phone call, which can either be a local, a national or an international call. He can then decide at which point in time and in which billing period to plan and make the call. This provides the user with additional possibilities of reducing telephone costs by making the call in a cheaper billing period.

In an embodiment of the present invention the downloading of the tariff information takes place during a session wherein a service number is being called, which calling is, either or not initiated by the user. If not initiated by the user the calling of the service number can be advantageously be automated so that it may take place in the background.

Generally the downloading of billing information is activated only if at least the identity of the user is known to the provider of the billing service, which will be the network provider, network manager or network administrator.

The downloaded information can in a further embodiment of the method and system according to the invention be used to update billing information, which may be present in a table in a memory in a mobile station or communication device, such as a mobile telephone.

Preferably the system, in particular the mobile station, comprises selection means, so that the user may select his preferred network manager or network administrator, which may be chosen to be the cheapest for that particular phone call and/or for that time of the day or week, in order to cope with his preference.

At present the invention will be elucidated further together with its additional advantages while reference is being made to the appended drawing. In the drawing:

Fig. 1 shows a schematically illustrated embodiment of the system according to the invention, and

Fig. 2 shows a possible format of a tariff information request for application in the method according to the invention.

Fig. 1 shows a system 1 comprising one or more base stations 2-1, 2-2 and mobile stations 3-1, 3-2, and 3-3. These stations 2 and 3 are capable of communicating with one another either through the air, satellites and/or cables. The whole forms a communication network with network providers, and network managers or network administrators commercially exploiting the network or parts thereof. Users of the network are being provided with mobile stations, such as pagers, mobile telephones etcetera and they are allowed to use network facilities, such as telephone facilities against payment of a certain tariff, which tariff may vary dependent on the required services, data transmission rate, time of the day, distance between communicating parties, types of calls, such as local, national, international etcetera. The system 1 in Fig. 1 is shown to have cells 4-1, 4-2, wherein respective base stations 2-1, 2-2 are capable to communicate with mobile stations present therein. Both base station and mobile station have mutually communicating downloading means 5 comprising the tariff providing means and tariff calling means 6 respectively. If a user such as illustrated by the mobile station 3-1 wants to set up a communication with some other subscriber user of the communication network a contact is made between the mobile station, in this case 3-1, and the base station, in this case 2-1. The tariff calling means 6 start, either automatically or initiated by the user a session to send a request to the downloading means 6 to perform a tariff service in order to provide adequate information about a current tariff for local telephone calls. A possible format of such a request is shown in Fig. 2.

Fig. 2 shows information fields referenced by A, B, and C. A is an information field, which identifies the type of request, B contains user identification information, and C contains information about future calls which can be made, such as local, international, time or specific telephone number etcetera. The initial request asks for tariff information about local calls if made from the location where the user is at that moment, in which case C=LOCAL. A user identification is usually sufficient for the base station 2-1 to establish who made the request, so that the costs for the tariff service can be charged to the user. If the user wants more detailed tariff information he can prepare and send a request from the tariff calling means 6 to the downloading means of the tariff service asking for e.g. the costs of the making of a telephone call to a number, which may be specified as C=NUMBER. Consequently the downloading means 5 in the base station 2-1 provide the wanted tariff information to the mobile station 3-1. The mobile station comprises a display means 7, such as a LCD screen, displaying the wanted tariff information. The downloaded information can be used to update a memory or table 8 to contain updated tariff information

for possible future use. Generally processors, such as microprocessors identified with 9 and 10, in the stations 2-1 and 3-1 respectively control the commonly known set up of a telephone connection in the communication system 1. The microprocessors 9 and 10 if properly programmed provide a menu driven tariff information service to enable the user to have the disposal of tariff information about future calls to be made. Off course the format exemplified in fig. 2 can be varied at wish, so that more and/or other types of information can be exchanged at wish simultaneously between the stations 2-1 and 3-1. For example a listing can be made of available time periods, network administrators and charges for calls made during said periods such that the user can select his particular choice of possible calls, such as telephone calls. The system 1 contains selection means 11 to input the choice, usually comprising keys, or a keyboard.

In view of the foregoing it will be evident to a person skilled in the art that various modifications may be made within the spirit and the scope of the present invention as hereinafter defined by the appended claims and that the present invention is thus not limited to the examples provided.

CLAIMS:

1. A method for providing tariff information to a user in a communication network, the method comprising a downloading of the tariff information from the communication network to the user, characterised in that the downloading of the tariff information takes place before the making of a regular call by the user.

2. The method according to claim 1, wherein the downloading of the tariff information takes place during a session wherein a service is being called for.

3. The method according to claim 2, wherein the service or service number is called for during a session which is, either or not initiated by the user.

4. The method according to one of the claims 1-3, wherein the tariff information is used to update a user tariff information table.

5. The method according to claim 4, wherein the content of the user tariff information table is dependent on the actual location of the user in the communication network.

6. The method according to claim 4 or 5, wherein the updated content of the tariff information table is being made available at the premises of the user upon request.

7. The method according to claim 6, wherein the content of the tariff information table is being made available visually to the user.

8. The method according to one of the claims 1-7, wherein a selection is being made respecting the cheapest tariff available to the user.

9. A system comprising one of more base stations and one or more mobile stations set up for mutual communication between the stations, and means for downloading

tariff information from the base station to the mobile station, characterised in that the system is provided with means for calling a tariff service, which tariff calling means are activated prior to a making of a regular call by the user.

10. The system according to claim 9, wherein the means for downloading tariff information are activated once the users' identity is known to the base station.

11. The system according to claim 9 or 10, wherein the system comprises selection means whereto downloaded updated tariff information is inputted for selection of a most economical network administrator.

12. A mobile station, for example a mobile communication device, such as a mobile telephone provided with communication means for communication with other stations and means for downloading tariff information, characterised in that the mobile station is provided with means for calling a tariff service, which tariff calling means are activated prior to a making of a regular call by the user.

13. A base station provided with communication means for communication with other stations and means for downloading tariff information, characterised in that the base station is provided with tariff information providing means, which tariff information providing means are activated prior to a making of a regular call by the user.

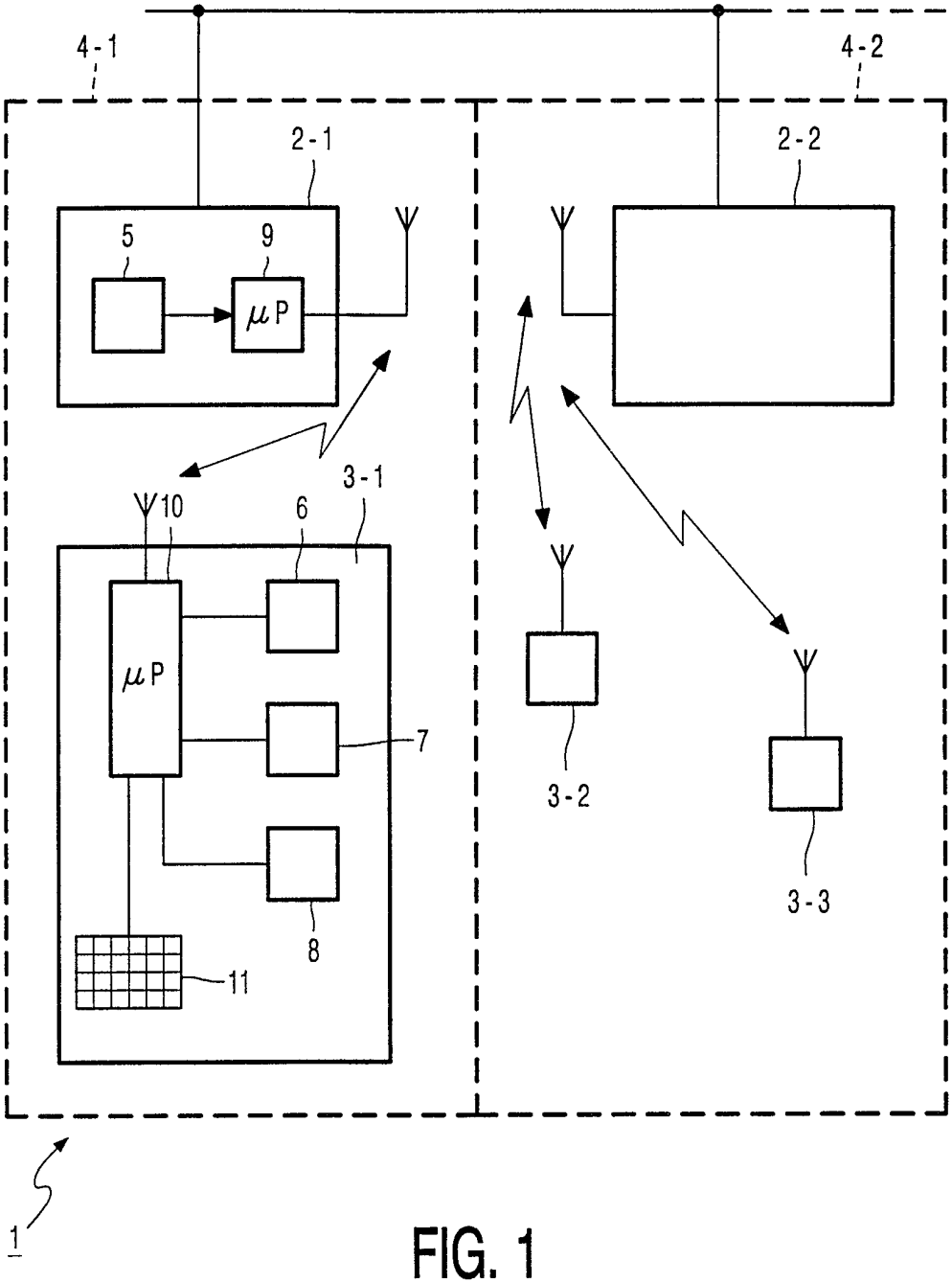

FIG. 1

A	B	C

FIG. 2