Abstract: The present invention enables a subscriber to inform callers about his inability to receive the call by setting information messages corresponding to specific profiles as his RBT. The subscriber can set the RBT by sending a message to set or remove a specific profile which describes the reason for his inability to receive the call. The invention further facilitates the subscriber to set the profile by providing only the compulsory information; default values are provided for the other parameters. The invention facilitates the subscriber to set the profile using varied interfaces.
TITLE: METHOD AND SYSTEM FOR SETTING RING BACK TONE PROFILES

TECHNICAL FIELD

[001] The present invention relates to the field of RingBack Tones (RBT) selection. More particularly, the invention relates to setting RBT profiles.

BACKGROUND AND PRIOR ART

[002] Call progress tones during a telephone call signal the state of the device being called. Dial tone, engage tone, ringback, tone, and call waiting tone are examples of call progress tones.

[003] In addition to indicating the status of the device being called, these tones are also known to be used for the purposes of entertainment of the caller making the call by playing music as RBT. Using music (or any such content with entertainment value) tunes as RBT has in itself become a good source of revenue generation for creators and/or owners of such music. Facilities are provided for users to have RBT settings customized to specific callers. For example, users can set jokes as RBT for a group of his friends and a religious song as RBT for his family members or seniors.

[004] It is also known that telecommunication service providers provide facilities for users to set certain preferences for RBT depending on the time of the day to override the existing settings for RBT. Therefore it is possible to select various profiles, each defined by an RBT for a particular period of time for a set of callers. Setting RBT profiles can help a subscriber not only in projecting ones individuality by using appropriate tones.

[005] There exists a need for the subscriber to inform the callers about his inability to receive the call by communicating his situation at the time of a call. For example, during a meeting, a subscriber may want to set an informational message as RBT where the informational message informs the caller that the subscriber is in a call for the next few hours and hence would not be able to take up any call during the time of the meeting.

OBJECTS OF THE INVENTION

[006] The primary object of the invention is to set an informational message as RBT to his callers.

[007] Another object of the invention is to provide the user with multiple interfaces to set the informational message as RBT.

[008] Another object of the invention is to provide a method and system that allows non-invasive way of setting RBT profiles.
STATEMENT OF THE INVENTION

[009] Accordingly, the present invention provides a method and system to allow a subscriber to set his RBT profile wherein the profile can be set using a plurality of interfaces including but not limited to WAP, Web, SMS, USSD, and IVR.

[0010] The method of the invention comprises of a subscriber sending the profile information including the name of the profile to be set, the language in which the RBT needs to be played, and the time duration from the time at which the message was sent for which the specified RBT needs to be played; and the system accepting such a message to set the RBT according to the preferences stated in the message.

[0011] The system of the invention comprises of a plurality of terminals providing the subscriber with plurality of interface options which allow the subscribers to send a message; a server comprising an RBT application; a Message Service Center (MSC) that redirects the message to the server for setting a profile according to the preferences given; and a database that essentially comprises of the profile date of various subscribers.

[0012] According to one aspect of the invention, the subscriber may choose to list all profiles available by sending a message in a pre-defined format.

[0013] According to another aspect of the invention, the server sets default values for the optional parameters for which the subscriber has not set the values.

[0014] According to another aspect of the invention, the server keeps checking the time duration for profile settings to deactivate at the right time in accordance with the preferences given by subscribers.

[0015] Further objects, features and advantages will become apparent from the following description, claims and drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016] The above aspects of the invention are described in detail with reference to the attached drawings, where:

FIG. 1 is a flowchart to illustrate another aspect of the method of the invention.

FIG. 2 is a flowchart to illustrate another aspect of the method of the invention.

FIG. 3 is a flowchart to illustrate another aspect of the method of the invention.

FIG. 4A illustrates the interaction in the system of the invention.

FIG. 4B illustrates the components of the RBT server.
DETAILED DESCRIPTION OF THE INVENTION

[0017] The method and system of the invention are described with reference to the accompanying figures for illustrating the preferred embodiments and not meant to be restrictive. The present invention provides a method and system to allow a subscriber to act his RBT profile wherein the profile can be set using a plurality of interfaces including but not limited to WAP/Web, SMS, USSD, and IVR. In one embodiment, SMS is used to set RBT profiles. As an example, the SMS interface is used to describe the invention.

[0018] Fig. 1 illustrates one aspect of the method of the invention. A subscriber who wants to set a profile sends a message in the following format:

  <code> <profile> <lang> <hours>

where <code> is a service provider specific code that he sends in the message intended for profile setting, the <profile> is the name of the profile that the subscriber intends to set as profile, <lang> is the code of the language that the subscriber intends to set as language for the RBT. <hours> is the time duration from the time at which he sends the message for the set profile to be the RBT.

[0019] An example message could look like this:

CT Meeting | Hindi | 1 hr

which means that the subscriber wants to set a "meeting" profile according to which a message will play in Hindi for the one hour saying that the subscriber is busy for the next one hour for a particular time as calculated by the server as RBT. In the example given, "CT" is the code to indicate that the message is intended for profile setting. In one embodiment of the invention, the language and the time duration are optional components to the message.

[0020] Further, the options available for <profile> can include but are not limited to "Battery", where the subscriber can inform the caller that he is not available due to low battery at his terminal. The subscriber can further set the RBT informing the caller that he is not available since he is busy: The subscriber can set his profile to inform the caller that he is "Driving". The subscriber can inform the caller that he is not available since he is in the "Gym" or "Class" or at a "Meeting". The subscriber can further inform the caller that he is not able to receive the call as his phone has been set for "Roaming", further he can also inform about International Roaming. The subscriber can further inform the caller that he has chosen not to receive the call at the moment by setting the "Nophone" option in the <profile>. The subscriber can further inform the caller that he is at "Dinner" or "Lunch" or in the "Canteen" of holidaying by setting the "Holiday" option for the <profile>. The subscriber can further set the profile to inform the caller of his state of being at the moment of the call by setting the <profile> as "Sleeping" or "Playing" or...
"Unwell" or he has been detained due to "Rain". The subscriber can further inform the caller that he is with "Visitors" or at the "Movie".

[0021] The subscriber can send the message in the format as shown above using any of the plurality of interfaces provided wherein the bearer includes but is not limited to WAP, WEB, USSD, SMS, and IVR.

[0022] Subscriber sends a message as indicated above to a pre-determined shoncode. An MSC recognizes the code of the message and redirects the message to the server. Server receives the message. Server checks if the optional parameters are present. According to the example illustrated earlier, the server checks if there is language specified in the message. If there is no language specified, the server sets a default language; then the server checks if the time duration is specified. If time duration is not specified in the message, the server assigns a default time duration of one hour.

[0023] The method and aspects of the invention are illustrated by using the example of sending the profile information using SMS; other interface provided by bearers including but not limited to IVR, WAP, WEB; USSD and IVR can also be used for sending the profile information.

[0024] Fig 2 illustrates an aspect of the invention with an example where a subscriber can receive a list of existing profiles as an SMS by sending an SMS in a pre-defined format. User sends a message in the following format:

<code> <profile list code>.

where <code> represents the code assigned to a service provider to recognize that the message intended for profile setting related functionalities for the service provider to whom the <code> is assigned, and <profile list code> is the code name for the functionality to list all available profile names so that a subscriber will be able to know them and use them as and when the need arises.

[0025] An example message to list profiles could look like this;

CTLIST

Where "CT" is the code assigned to a service provider, the network of which the subscriber belongs; and "LIST" is the code for the service to list all available profiles through an SMS.

[0026] Subscriber sends a message to list all available profiles as indicated in the example. Server detects the command; identifies the subscriber's terminal through the message received; constructs one or more messages with all available profiles; and sends the one or more messages constructed back to the subscriber. Subscriber can view/store the list for further use.
Fig 3 illustrates a further method of the invention where a subscriber can remove a set profile by sending an SMS in a pre-defined format. User sends a message in the following format:

```<code> <profile remove code>```

where `<code>` represents the code assigned to a service provider to recognize that the message intended for profile setting related functionalities for the service provider to whom the `<code>` was assigned, and `<profile remove code>` is the code name for the functionality to remove set profile and retain settings that existed before setting the profile that is sought to be removed.

An example message to delete the set profile could look like this:

```
CT RMV
```

which means that the subscriber would like to remove the existing profile and retain prior RBT settings that were existing before the subscriber had overridden the RBT setting by sending a message to set RBT profile. Here "CT" is the code assigned to a service provider, the network of which the subscriber belongs; and "RMV" is the code for the service to remove a set profile and retain settings that existed before setting the profile that is sought to be removed.

Subscriber sends a message to remove a set profile as indicated in the example. Server detects the command; identifies the subscriber through the message received; checks if the profile specified is set for the subscriber, and if the profile is indeed set, server removes the profile to retain prior RBT settings until the subscriber sends another message to set a profile. Upon successful removal of profile, the server sends a confirmation message to the subscriber.

FIG. 4A illustrates an example system wherein the profile information is sent as an SMS for the implementation of preferred embodiments; the system components include subscriber terminal sending a message (401); a switching component. Message Service Center (MSC) (402) to identify and redirect messages to appropriate servers; a server comprising an RBT application (403); and a profile database that comprises of the RBT profile data of various subscribers.

FIG. 4B illustrates the different components of the RBT server (404) and the server's interaction with the profile database (405).

The RBT server essentially includes a timer module (405) and a profile selection module (406). The profile selection module (406) interprets the messages.
received and performs appropriate actions including setting profiles, preparing and sending message to list available profiles, and removing a set profile and sending a confirmation message through the MSC. The timer module (405) checks the various profiles periodically for their validity according to the time durations and removes profiles as and when a profile’s time duration is over. The timer module (405) sends commands to the profile selection module (406) to remove profiles as and when it detects any profiles completing their time duration.

[0031] The RBT server (403) further comprises of the Data access layer (407) to provide simplified access to the profile database (404).

[0034] Although the present invention has been described with particular reference to specific examples, variations and modifications of the present invention can be effected within the spirit and scope of the following claims.
CLAIMS:

1. Method of providing RBT profiles, the method comprising the steps of:
   a) defining profile at a server,
   b) relating profiles to pre-recorded information to be used as RBT; and
   c) retrieving and playing a pre-recorded information message according to the profile set by a subscriber.

2. Method of providing RBT profiles as claimed in claim 1, where profile information comprises of
   a) name of the profile to be set;
   b) language of the profile to be set; and
   c) time duration for which a profile will be active.

3. Method of providing RBT profiles as claimed in claim 2, where language of the profile to be set is optional and when language is not available, the server assigns a pre-defined default language.

4. Method of providing RBT profiles as claimed in claim 2, where time duration of the profile to be set is optional and when time duration is not available, the server assigns a pre-defined default time duration.

5. Method of providing RBT profiles as claimed in claim 1, where the server monitors the time duration for which a profile is set to be active at configurable intervals and removes the profile setting when the time duration is over.

6. Method of providing RBT profiles as claimed in claim 1, where information provided to calling party is according to the profile set at the time of call, where a profile set by the subscriber is one of the following:
   a) Battery, indicating that the subscriber's terminal station is low on battery charge;
   b) Busy, indicating that the subscriber is currently busy,
   c) Driving, indicating that the subscriber is driving;
   d) Gym, indicating that the subscriber is at the gym;
   e) Class, indicating that the subscriber is in a class;
   f) Meeting, indicating that the subscriber is in a meeting;
   g) Nophone, indicating that the subscriber cannot talk;
   h) Holiday, indicating that the subscriber is on a holiday;
   i) Roaming, indicating that the subscriber is on roaming;
   j) Dinner, indicating that the subscriber is having dinner;
   k) Lunch, indicating that the subscriber is having lunch;
   l) Sleeping, indicating that the subscriber is sleeping;
   m) Work, indicating that the subscriber is at work;
   n) Visitors, indicating that the subscriber is spending time with visitors;
   o) Movie, indicating that the subscriber is at a Movie;
   p) Canteen, indicating that the subscriber is at a Canteen;
7. Method of setting RBT profiles, the method comprising the steps of:
   a) receiving a request at the server including subscriber profile information;
   b) server recognizing the request and extracting profile information from the request;
   c) playing a customized informational message to a calling party to be subscriber as RBT informing the calling party about the subscriber.

8. Method of setting RBT profiles as claimed in claim 7, where information provided by the subscriber comprises of:
   a) name of the profile to be set
   b) language of the profile to be set; and
   c) time duration for which the profile will be active.

9. Method of setting RBT profiles as claimed in claim 8, where language of the profile to be set is optional.

10. Method of setting RBT profiles as claimed in claim 8, where time duration of the profile to be set is optional.

11. Method of setting RBT profiles as claimed in claim 7, the method further comprising the steps of:
   a) subscriber requesting to list all available profiles; and
   b) server listing all available profiles.

12. Method of setting RBT profiles as claimed in claim 7, the method further comprising the steps of:
   a) subscriber requesting to remove RBT profile; and
   b) server removing set profile to retain RBT setting prior to setting the profile.

13. Method of setting RBT profiles as claimed in claim 7, the method further comprising the step of server setting default values for the optional parameters for which the subscriber has not provided values.

14. Method of setting RBT profiles as claimed in claim 7, where subscriber requests are through an SMS interface.

15. Method of setting RBT profiles as claimed in claim 7, where subscriber requests are through an USSD interface.

16. Method of setting RBT profiles as claimed in claim 7, where subscriber requests are
through a Web interface.

17. Method of setting RBT profiles as claimed in claim 7, where subscriber requests are through an WAP interface.

18. Method of setting RBT profiles as claimed in claim 7, where subscriber requests are through an IVR interface.

19. The system for providing RBT profiles comprises of:
   a) a plurality of terminals providing a subscriber with plurality of interfaces which allow the subscriber to place a request;
   b) a server comprising an RBT application,
   c) a Message Service Center (MSC) that redirects the request to the server for setting a profile according to the request; and
   d) a database that essentially comprising of the profile data of a plurality of subscribers,

20. The system for providing RBT profiles as claimed in claim 19, where the server essentially comprises of:
   a) a profile selection module to interpret the requests received and performs appropriate actions including setting profiles, preparing and sending a message to list available profiles, and removing a set profile and sending a confirmation message through the MSC;
   b) a timer module to check the various profiles set by subscribers periodically for their expiry according to the time durations and further send commands to the profile selection module to remove profiles as and when it detects any profiles completing their time duration; and
   c) a data access module to enable access to the database.

21. A computer program product essentially comprising of:
   a) a profile selection means to interpret the requests received and performs appropriate actions including setting profiles, preparing and sending a message to list available profiles, and removing a set profile and sending a confirmation message through the MSC;
   b) a timer means to check the various profiles set by subscribers periodically for their expiry according to the time durations and further send commands to the profile selection module to remove profiles as and when it detects any profiles completing their time duration; and
   c) a data access means to enable access to the database.
Start

Subscriber sends a message to set profile

Server receives the message

Yes: Server checks if message has language set

No: Server sets the default language

Yes: Server checks if message time duration set

No: Server sets the default duration of 1 hr

End

Fig 1
Start

Subscriber sends a message to list existing profiles

Server receives the message

Server sends a list of available profiles through a message

Subscriber views the list for further use

End

Fig 2
Start

Subscriber sends a message to remove profile

Server receives the message

Server checks if specified profile is set for the subscriber

No

Yes

Server removes the profile

Server sends a confirmation message to the subscriber

End

Fig 3
Subscriber A sending SMS to set/remove/list profile

Fig 4A
Fig. 4B