

Method and System for Enabling Ringback Tone Service without Network Dependency

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Abstract A ringback tone assigning system 112 for playing a ringback tone during a call is provided. The ringback tone assigning system enables a ringback tone to be assigned by a first user 102 /second user 108 without a mobile network dependency. When the call is initiated by the first user 102 (i.e. calling party) to the second user 108 (i.e. receiving party), a selected ringback tone is played at a first user device 104 by ringback tone assigning system 112. The selected ringback tone that is played was stopped at any time, by either the voice of the first user 102 or a notification received in the first user device 104 when the second user 108 attends the call or when the selected ringback tone reaches the preset time limit.

Keywords Ringback Tunes, Caller Tunes, Ringback Tones

1. Introduction

The advent of telephonic communication has been one of the major breakthroughs in communication technology. A basic phone communication involves a calling party and a receiving party. When the calling party makes a call, there exists a time period until the receiving party attends to it to establish the call. The tone heard by the calling party before the call is connected is called a ringback tone.

In the past, a standard ringback tone was provided, such that the same ringback tone was heard by all callers in a telephone network. More recently, newer services allow a user to customise their ringback tone. Instead of hearing a standard ringback tone, the user hears a ringback tone based on, for example, the identity of the calling party, time of day, or other factors. A variety of ringback tones may be provided, including musical songs and advertisements. The user may also record his/her own ringback tone. However, current ringback tones can become tedious very quickly, especially if the calling party calls multiple times over a short period of time and has to hear these tone repeatedly. Acquiring/downloading new ringback tones, changing them on a regular basis, and assigning them to specific callers is often paid, inconvenient and time consuming.

Another problem with current ringback tone services is that the calling party has no control over what he hears once he dials a phone number and is waiting for the call to be established. Current system of communication networks does not allow the calling party to perform any action while

listening to the ringback tone, except to disconnect the call. The lack of control is particularly troublesome when callers find the ringback tone selected by the called party to be uninteresting or annoying or even offensive. Accordingly, there is a need for a system and method for an option to the calling party to enable or control a ringback tone played before the call connected, without the interference of mobile network at little or no cost to the user.

2. Main Body

In view of a foregoing, an embodiment herein provides a ringback tone 5 assigning system for enabling a ringback tone without mobile network dependency. The tone assigning system includes a memory unit, and a processor. The memory unit stores (a) a set of modules, and (b) a database. The processor which executes a set of modules. The set of modules includes a ringback tone selection module, a ringback tone communication module, a ringback tone notification receiving module and a ringback tone determination module. The ringback tone selection module implemented by the processor, that allows at least one of (i) a first user to select a ringback tone for a second user through a first user device or (ii) the second user to select the ringback tone for the first user, through a second user device, to be played when the first user initiates a call to the second user. The ringback tone communication module implemented by the processor, communicates the selected ring back tone to a ringback tone server when at least one of (i) the first user selects the ringback tone for the second user, or (ii) the second user selects the ringback tone for the first user. The ringback tone notification receiving module implemented by the processor, receives a notification from the ringback tone server in at least one of (i) the second user device when the first user

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selects the ringback tone for the second user or (ii) the first user device when the second user selects the ringback tone for the first user to be played when the first user initiates the call to the second user. The ringback tone determination module implemented by the processor, determines which ringback tone to be played on the first user device, when the first user initiates the call to the second user. In one embodiment, the ringback tone assigning system further includes a new 25 contact registration module, an existing contact ringback tone updation module, a contact synchronisation module, a voice recognition module and a call attended notification receiving module. The new contact registration module implemented by the processor, allows either the first user or the second user, to add a new contact in the first user device or the second user device. The existing contact ringback tone updation module implemented by 30 the processor, updates an existing contact of at least one of (i) the first user, or (ii) the second user with a new ringback tone. The contact synchronisation module implemented by the processor, syncs all contacts of the first user, or the second user with the ringback tone on every Nth minute. The voice recognition module implemented by the processor, (a) detects a voice of the first user in the first user device and (b) stops the ringback tone that is being played in the first user device. The call attended notification receiving module implemented by the processor, (a) receives a notification from the second user device when the second user attends the call and (b) stops the ringback tone that is being played in the first user device. In one embodiment, all contacts of the first user, or said second user with the ringback tone are synchronised when the ringback tone notification receiving module receives the notification from the ringback tone server. In one embodiment in the ringback tone assigning system, the first user is a caller when the second user is a receiver. In another embodiment in the ringback tone assigning system, the first user is a receiver when the second user is a caller.

In one embodiment the ringback tone determination module determines the ringback tone selected by the second user to be played to the first user while initiating the 15 call to the second user when the second user assigns the ringback tone for the first user. In another embodiment the ringback tone determination module determines the ringback tone selected by the first user to be played to the first user while initiating the call to the second user when at least one of (a) the second user does not assign the ringback tone for the first user, or (b) the first user assigns the ringback tone for the second user. In yet another 20 embodiment, the ringback tone determination module determines a random ringback tone from the first user device to be played to the first user while initiating the call to the second user when (a) the second user does not assign the ringback tone for the first user, and (b) the first user does not assign the ringback tone for the second user. In one embodiment, the ringback tone selection module allows the first user to select the ringback tone for one or more second users through the first user device. In one aspect, a method of enabling a ringback tone by a first user to a second user using a ringback tone

assigning system is provided. The method of enabling the ringback tone by the first user to the second user using the ringback tone assigning system includes the following steps of (i) selecting, using a ringback tone selection module, the ringback tone by at least one of (a) the first user for the second user, from a first user device or (b) the second user for the first user, from a second user device, (ii) communicating, using a ringback tone communication module, the selected ringback tone to the ringback tone server when at least one of (a) the first user selects or updates the ringback tone for the second user, or (b) the second user selects or updates the ringback tone for the first user, (iii) receiving, using a ringback tone notification receiving module, a notification from the ringback tone server, in at least one of (a) the second user device, when the first user selects or updates the ringback tone for the second user, or (b) the first user device, when the second user selects or updates the ringback tone for the first user, (iv) determining, using the ringback tone determination module, the ringback tone to be played by the first user device when the first user initiates a call to the second user, and (v) terminating, using a voice recognition module, the ringback tone played in the first user device when a voice of the first user is detected in the first user device. The determining of the ringback tone using the ringback tone determination module includes (a) selecting at least one of (i) checking, the ringback tone that is selected by the second user for the first user, or (ii) checking, the ringback tone that is selected by the first user for the second user, or (iii) randomly selected ringback tone from the first user device, when neither the first user or the second user selects the ringback tone and (b) loading and playing, the selected ringback tone in the first user device.

In one embodiment, the method of enabling the ringback tone by the first user to the second user using the ringback tone assigning system further includes the following 20 steps of (i) checking whether the first user or the second user is a new contact, (ii) registering, using a new contact registration module, the new contact in the first user device or the second user device, (iii) uploading, a new ringback tone, for the new contact by at least one of (a) the second user to the ringback tone server, or (b) the first user to the ringback tone server, (iv) updating, using an existing contact ringback tone updation module, an existing 25 contact with the new ringback tone to the ringback tone server by at least one of (a) the first user, or (b) the second user, and (v) syncing, using a contact synchronisation module, all contacts of the first user or the second user with the ringback tone on every Nth minute. In one embodiment, all contacts of the first user, or the second user with the ringback tone are synchronised when the ringback tone notification receiving module receives the notification from the ringback tone server.

In another embodiment, the syncing of the first user device with the ringback tone server for updating the ringback tone includes (i) checking, whether at least one of (a) any updated contact, or (b) a new contact found, (ii) downloading, the ringback tone from the ringback tone server to at least one of (a) the first user device, and (b) the second user device, (iii)

replacing, the ringback tone in at least one of (a) the first user device, and (b) the second user device; and (iv) updating, last syncing time with the ringback tone server of at least one of (a) the first user device, and (b) the second user device.

In one embodiment, the terminating a play of the ringback tone further includes (i) at least one of (a) receiving, using a call attended notification receiving module, a notification from the second user device when the second user attends the call, or (b) checking, whether the ringback tone being played reaches a preset time limit; and (ii) stopping the play of the ringback tone in the first user device. In one embodiment, the selecting includes using the ringback tone selection module, the ringback tone by the first user for one or more second users, from the first user device. These and other aspects of the embodiments herein will be better appreciated 15 and understood when considered in conjunction with the following description and the accompanying drawings. It should be understood, however, that the following descriptions, while indicating preferred embodiments and numerous specific details thereof, are given by way of illustration and not of limitation. Many changes and modifications may be made within the scope of the embodiments herein without departing from the spirit thereof, and the embodiments herein include all such modifications.

2.1. Figures

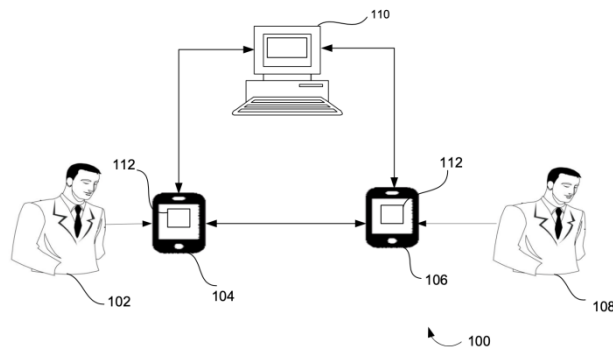


Figure 1

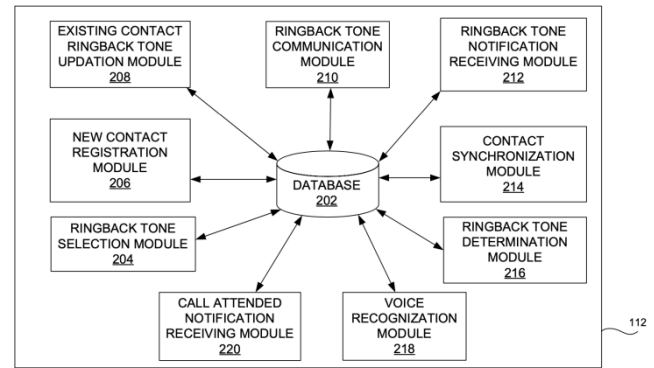


Figure 2

3. Conclusions

The embodiments herein generally relate to communication systems, and more specifically relates to, controlling and playing of ringback tone by a calling party in his/ her device while waiting for the call to be connected with the receiving party. As mentioned, there remains a need for a system and method for an option to the calling party to enable or control a ringback tone played before the call connected, without the interference of mobile network at little or no cost to the user. The embodiments herein achieve this, by allowing the calling party to enable/control a ringback tone to be heard by the calling party while waiting for the call to be connected with the receiving party. Referring now to the drawings, and more particularly to FIGS. 1 through 2, where similar reference characters denote corresponding features consistently throughout the figures, preferred embodiments are shown.

REFERENCES

- [1] James E. Haley Douglas R. Jones John H. Wurster Susan M. Middleswarth, Patent: 8126126B2 USA.