

an interface device configured to bi-directionally communicate with a mobile device (preferably wirelessly), that includes a satellite antenna on the communications device and a voice/data modem configured to bi-directionally communicate with a satellite network via the antenna. The communications system may or may not also include a softswitch device that interfaces both satellite systems and accesses mobile networks via either the internet or via the mobile network.

According to a first aspect of the present invention, there is provided a method of switching an active ongoing first electronic communication at a mobile device from a first network to a second network, where said first network is one of a mobile cellular communications network or a satellite communications network and said second network is the other of said mobile cellular communications network or a satellite communications network, using a switch device located remotely from said mobile device, and said switch device is configured to communicate with a mobile cellular communications network and a satellite communications network; said method comprising the steps of: (1) said switch device receiving a notice from said mobile device, said notice operating to indicate that a switch is desired; said switch device initiating a second electronic communications directed to said mobile device, where said second electronic communication is configured to establish communications to said mobile device via said second network; said switch device switching said ongoing electronic communication from said first network to said second electronic communication established on said second network.

According to a second aspect of the present invention, there is provided a method of transferring or switching an ongoing first electronic communication at a mobile device from a first network to a second network, where said first network is one of a mobile cellular communications network or a satellite communications network and said second network is the other of said mobile cellular communications network or a satellite communications network, and said mobile device comprises a mobile component configured to operatively communicate over said mobile cellular communications network and a satellite component configured to operatively communicate over said satellite communications network; said method comprising the steps of: determining at said mobile device the cellular signal strength of said mobile cellular communications network, and based on said cellular signal strength, determining to transfer from said first network to said second network; said mobile device sending a notice to a remotely located switch device, over said second network or said first network, said notice acting as a request to transfer; said mobile device receiving, from said switch device, notice that said ongoing communications is active on said second network; said mobile device transferring said ongoing communications from said mobile or satellite component associated with said first network, to the other of said mobile or satellite component associated with said second network.

According a third aspect of the present invention, there is provided a method of selecting, at a mobile device, a network over which to receive an incoming electronic communication, where said selection includes either a first network or a second network, where said first network is one of a mobile cellular communications network or a satellite communications network and said second network is the other of said mobile cellular communications network or a satellite communications network, the method comprising the steps of: receiving at said mobile device a notice over said satellite communications system of a pending incoming electronic communication, said notice received from a remotely located switch device, where said switch device is configured to communicate with a mobile cellular communications network and a satellite communications network; receiving a notice at said mobile device over said mobile cellular communications network of a pending incoming electronic communication over said mobile cellular communications network, said notice received from a remotely located switch device; said mobile device determining if cellular signal strength is above or below a predetermined threshold limit; if said cellular signal strength is above said threshold limit, said mobile device answering said incoming electronic communication over said mobile cellular communications network; if said signal strength is below said threshold limit, said mobile device answering said incoming electronic communication over said satellite communications network.

According to a fourth aspect of the present invention, there is provided a system for switching electronic communications between a first network and a second network, said system comprising a first network, said first network comprising one of a mobile cellular communications network or a satellite communications network and said second network is the other of said mobile cellular communications network or a satellite communications network; a series of mobile devices each capable of communication over said first and said second network; each of said mobile devices having a pair of SIM cards associated therewith; for each mobile device, one of said pair of SIM cards assigned to and located with said mobile device, the other of said pair of SIM cards being associated with a switch device and located remote from said mobile device; said switch device further being located remotely from said mobile devices; said switch device comprising a processor and a database, said switch device capable of communicating over said first and said second networks simultaneously to a select one of said series of mobile devices.

## **DESCRIPTION OF THE DRAWINGS**

Figure A depicts the system used to transfer calls between networks.

Figure B shows the flow of an outbound call from a mobile device in one embodiment of the system.

Figure C depicts the flow of an inbound call to the mobile device in one embodiment of the system.

Figure D is a block diagram of depicting some of the components of one embodiment of a VHSG.

Figure E is a block diagram depicting some of the components of one embodiment of a reinforcer.

Figure F depicts the flow for an inbound call in an alternative embodiment.

## **DESCRIPTION OF THE PREFERRED EMBODIMENT**

Traditional cellular or mobile networks include mobile devices (cell enabled devices) such as smart phones, that communicate wirelessly to cellular towers 20, which then route received calls to another communications device, such through a gateway to the public switched telephone network, or another mobile network. As used herein, a mobile communications network is a radio enabled cellular network where the mobile device 40 directly communicates through a cell 20 which interfaces with the public switched telephone network, another cell network, or the internet). A satellite communications network includes satellite communications devices, such as a satellite phone, that communicates directly to a satellite 10, which then redirects the call to a satellite gateway 11 for routing the satellite call via the public switched telephone network to another communications device. A systems diagram of an integrated wireless phone communications network is illustrated in Figure A. The integrated wireless phone communications network bridges the gap between cellular phone coverage via a network of cellular towers and satellite phone coverage via a network of satellites. The communications network further includes a conventional satellite network (depicted by the satellite 10 and satellite gateway 11) which communicates through satellite gateways 11 to a core network (including packet data routing systems) which

program, said reinforcer configured to receive and send data from said satellite transceiver and to receive and send data to said application program.

12. The method of claim 11 wherein said mobile device further has a user interface, said user interface operatively communicating with said application program.

13. The method of claim 12 where said application program is configured to transfer data received from said user interface to said reinforcer.

14. The method of claim 13 where said user interface comprises a microphone and speaker.

15. The method of claim 13 where said user interface comprises a keyboard.

16. The method of claim 15 where said keyboard is a virtual keyboard displayed on a smart phone.

17. The method of claim 12 where said application program is adapted to transfer data routed to said radio transceiver, to said reinforcer.

18. The method of claim 11 where said reinforcer further comprises a SIP server.

19. A system for switching electronic communications between a first network and a second network, said system comprising a first network, said first network comprising one of a mobile cellular communications network or a satellite communications network and said second network is the other of said mobile cellular communications network or a satellite communications network; a series of mobile devices each capable of communication over said first and said second network; each of said mobile devices having a pair of SIM cards associated therewith; for each mobile device, one of said pair of SIM cards assigned to and located with said mobile device, the other of said pair of SIM cards being associated with a switch device and located remote from said mobile device; said switch device further being located remotely from said mobile devices; said switch device comprising a processor and a database, said switch device capable of communicating over said first and said second networks simultaneously to a select one of said series of mobile devices.

20. The system of claim 19 wherein said SIM card comprises a subscriber identity module card or a RUIM card.

21. The system of claim 20 wherein at least one of said series of mobile devices further comprises a satellite transceiver, a smart phone and a short range wireless transceiver, said mobile device configured to communicate between said smart phone and said satellite transceiver over said short range wireless transceiver.

22. The system of claim 19 wherein for each of said series of mobile devices, said pair of associated SIM cards are associated with said respective mobile device in said database.

23. The system of claim 22 wherein said processor further comprises a session initiation protocol server.

24. The system of claim 19 wherein said switch device, when simultaneously communicating over said first and said second networks to a select one of said series of mobile devices, is communicating through a conference call associated with one of said pair of SIM cards associated with said select one of said mobile devices that is located remote from said mobile device, one portion of said conference call being over said first network, another portion of said conference call being over said second network.

25. The system of claim 19 wherein said mobile device further comprises a smart phone and a satellite transceiver.

26. The system of claim 19 wherein said switch device communicates with said mobile cellular communications network via Femto cell, Pico cell, Micro cell, or gnac (generic network access controller).

27. The system of claim 19 further comprising a SIM bank, said SIM bank storing a series of SIM cards, each stored SIM card being that one of said pair of SIM cards associated with each mobile device that is located remotely from said associate mobile device.

28. The system of claim 24 wherein said mobile device further comprises a satellite transceiver having an associate user satellite number, and communications to said mobile device over said satellite communications network are directed to said user satellite number.