

WHAT IS CLAIMED IS:

1. A method of obtaining addressing information, the method comprising:
establishing a communication path through a network between first and second
5 peer devices wherein a router is coupled between the first peer device and the
communication path through the network; and
receiving a first communication at the first peer device from the second peer
device through the communication path and the router, wherein a payload of the first
communication received at the first peer device from the second peer device includes a
10 public reachability address used by the second peer device to transmit the first
communication through the network and the router to the first peer device;
characterized in that the first peer device comprises a customer premises base station,
wherein the second peer device comprises a security gateway of a wireless
communication network, wherein the network comprises a broadband network, and
15 wherein the communication path comprises an Internet Protocol security tunnel
between the router and the security gateway through the broadband network;
and responsive to receiving the first communication including the public
reachability address, transmitting a second communication to the wireless
communication network wherein a payload of the second communication includes the
20 public reachability address received with the first communication.
2. The method according to Claim 1 wherein the public reachability address used
by the second peer device to transmit the first communication to the first peer device
includes an Internet Protocol, IP, address of the router and a source port number of the
25 router associated with the first peer device, and wherein the address of the first peer
device comprises a private address provided by the router to the first peer device.
3. The method according to Claim 1 ~~wherein the communication comprises a~~
~~second communication~~, the method further comprising:
30 before receiving the ~~second~~first communication, receiving a ~~first~~third
communication at the first peer device from the second peer device through the

communication path and the router, wherein the ~~first~~third communication is addressed by the second peer device using the public reachability address;

comparing at the first peer device the public reachability address used by the second peer device for the ~~first~~third communication and an address of the first peer device; and

responsive to determining that the public reachability address fails to match the address of the first peer device, transmitting a request for the public reachability address from the first peer device to the second peer device through the router and the network, wherein the ~~second~~first communication is received at the first peer device after transmitting the request.

4. The method according to Claim 3 wherein the ~~first~~ third communication includes a derivation of the public reachability address, and wherein comparing the public reachability address with the address of the first peer device comprises comparing the derivation of the public reachability address and a derivation of the address of the first peer device.

5. A method according to Claim 4 wherein the derivation of the public reachability address comprises a digest of a hash of the public reachability address, and wherein the derivation of the address of the first peer device comprises a digest of a hash of the address of the first peer device.

6. The method according to Claim 5 wherein the public reachability address includes an Internet Protocol, IP, address of the router and a source port number of the router associated with the first peer device, and wherein the address of the first peer device comprises a private address provided by the router to the first peer device.

~~7. The method according to Claim 1 wherein the first peer device comprises a customer premises base station, wherein the second peer device comprises a security gateway of a wireless communication network, wherein the network comprises a broadband network, and wherein the communication path comprises an Internet~~

~~Protocol security tunnel between the router and the security gateway through the broadband network.~~

78. The method according to Claim 17 wherein the communication is received over the Internet Protocol security tunnel in accordance with an Internet Key Exchange protocol.

9. ~~The method according to Claim 7, wherein the communication comprises a first communication, the method further comprising:~~
~~— responsive to receiving the communication including the public reachability address, transmitting a second communication to the wireless communication network wherein a payload of the second communication includes the public reachability address received with the first communication.~~

810. The method according to Claim 19 wherein transmitting the second communication comprises transmitting the second communication to a mobility management entity of the wireless communication network.

11. ~~A method of providing addressing information, the method comprising:~~
~~— establishing a communication path through a network between first and second peer devices, wherein a router is coupled between the second peer device and the communication path through the network; and~~
~~— transmitting a communication from the first peer device to the second peer device through the communication path and the router, wherein a payload of the communication includes a public reachability address used by the first peer device to transmit the communication through the network and the router to the second peer device.~~

12. ~~The method according to Claim 11 wherein the public reachability address includes an Internet Protocol, IP, address of the router and a source port number of the router associated with the second peer device, and wherein the address of the second~~

peer device comprises a private address provided by the router to the second peer device.

13. — The method according to Claim 11 further comprising:

5 — before transmitting the communication, receiving a request for the public reachability address from the second peer device at the first peer device, wherein transmitting the communication comprises transmitting the communication responsive to receiving the request.

10 14. — The method according to Claim 11 wherein the communication comprises a first communication, and wherein the public reachability address comprises a first public reachability address, the method further comprising:

15 — detecting a change to a second public reachability address used by the first peer device to transmit communications to the second peer device through the communication path and the router; and

— responsive to detecting the change to the second public reachability address, transmitting a second communication from the first peer device to the second peer device through the communication path and the router, where a payload of the second communication includes the second public reachability address.

20 15. — The method according to Claim 14 wherein the second public reachability address includes a second Internet Protocol, IP, address of the router and/or a second source port number of the router associated with the second peer device.

25 16. — The method according to Claim 11 wherein the first peer device comprises a security gateway of a wireless communication network, wherein the second peer device comprises a customer premises base station, wherein the network comprises a broadband network, and wherein the communication path comprises an Internet Protocol security tunnel between the router and the security gateway through the
30 broadband network.

17. ~~The method according to Claim 16 wherein the communication is transmitted over the Internet Protocol security tunnel in accordance with an Internet Key Exchange protocol.~~

5 18. ~~The method according to Claim 16, wherein the communication comprises a first communication, the method further comprising:~~

~~after transmitting the first communication including the public reachability address, receiving a second communication at the wireless communication network, wherein a payload of the second communication includes the public reachability address transmitted with the first communication.~~

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19. ~~The method according to Claim 18 wherein receiving the second communication comprises receiving the second communication at a mobility management entity of the wireless communication network.~~

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20. The method according to Claim 8 ~~19~~ further comprising:

using the public reachability address received at the mobility management entity to identify a coupling of the Internet Protocol security tunnel through the broadband network between the customer premises base station and the security gateway and to provision available broadband network resources to the customer premises base station.

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1024. A first peer device configured to communicate with a second peer device through a router and a network, the first peer device comprising:

a network interface configured to establish a communication path through the network between the first and second peer devices with the router coupled between the first peer device and the communication path through the network; and

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a processor coupled to the network interface wherein the processor is configured to receive a first communication from the second peer device through the communication path, through the router, and through the network interface, wherein a payload of the first communication includes a public reachability address used by the second peer device to transmit the first communication through the network and the router to the first peer device; characterized in that the first peer device comprises a

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customer premises base station, wherein the second peer device comprises a security gateway of a wireless communication network, wherein the network comprises a broadband network, and wherein the communication path comprises an Internet Protocol security tunnel between the router and the security gateway through the broadband network;

the first peer device being configured to, responsive to receiving the first communication including the public reachability address, transmitting a second communication to the wireless communication network wherein a payload of the second communication includes the public reachability address received with the first communication.

1122. The first peer device according to Claim 21-10 wherein the public reachability address used by the second peer device to transmit the communication to the first peer device includes an Internet Protocol address of the router and a source port number of the router associated with the first peer device, and wherein the address of the first peer device comprises a private address provided by the router to the first peer device.

~~23. A first peer device configured to communicate with a second peer device through a network and a router, the first peer device comprising:~~

~~— a network interface configured to establish a communication path through the network between the first and second peer devices, with the router coupled between the second peer device and the communication path through the network; and~~

~~— a processor coupled to the network interface wherein the processor is configured to transmit a communication through the network interface, through the communication path, and through the router to the second peer device, wherein a payload of the communication includes a public reachability address used by the processor to transmit the communication through the network interface, through the network, and through the router to the second peer device.~~

~~24. The first peer device of Claim 23 wherein the public reachability address includes an Internet Protocol, IP, address of the router and a source port number of the router associated with the second peer device, and wherein the address of the second~~

peer device comprises a private address provided by the router to the second peer device.