CLAIMS

1. A cellular communication system comprising:

a population of cellular communication network nodes comprising a stationary core, a plurality of base stations, and at least one node having mobile station functionality; and

a client tunneling functionality co-located with the node having mobile station functionality which is operative to use network topology information obtained via the mobile station functionality to initiate generation of a tunnel having a first end at the node and a second far end at the stationary core,

wherein said at least one node having mobile station functionality is operative to inform at least one neighboring node that said tunnel currently exists and also to inform at least one neighboring node when said tunnel no longer exists.

2. A system according to claim 1 and also comprising a server tunneling functionality which is operative to respond to tunnel generation initiation by said client tunneling functionality by cooperating with said node having mobile station functionality in generation of said tunnel including establishing said second far end of said tunnel.

3. A system according to claim 1 wherein said at least one node having mobile station functionality functions as a mobile core including employing said tunnel to carry out at least one core functionality.

4. A system according to claim 3 wherein said at least one node having mobile station functionality comprises a plurality of mobile cores being operative for communicating with one another and for simultaneously serving the population of nodes including providing communication links between each pair of nodes within the population of nodes wherein at least one communication link, between a first pair of nodes, is provided by a first core from among the plurality of mobile cores and wherein at least one communication link, between a second pair of nodes from among the plurality of mobile cores, is provided by a second core from among the plurality of mobile cores.

5. A system according to claim 1 wherein said network topology information obtained via the mobile station functionality comprises at least one routing table obtained from an attach message sent to said node having mobile station functionality upon attachment of said node to said stationary core via one of said plurality of base stations.

6. A system according to claim 4 wherein at least one pair of first and second mobile cores within the plurality of mobile cores communicate via existing base stations served by an existing core and wherein at least one node served by the first core communicates with at least one node served by the second core via a route including at least one hop between base stations served by the first mobile core, followed by at least one hop between base stations linking the first and second mobile cores and served by the existing core, followed by at least one hop between base stations served by the second mobile core.

7. A system according to claim 6 wherein at least said first mobile core possesses a functionality which the existing core does not possess thereby to allow said functionality to be applied at least to internal sessions between nodes in said population of nodes linked only by base stations served by said first mobile core.

8. A system according to claim 6 wherein said at least one node served by the first core communicates a message, to at least one node served by the second core, which is encoded while travelling between base stations linking the first and second mobile cores and served by the existing core, wherein said message is sent between base stations served by the first mobile core in the clear and is then encoded by an encoding functionality within the first mobile core and sent encoded through said at least one hop between base stations linking the first and second mobile cores and served by the existing core, thereby relieving the nodes served by the first mobile core of the task of obtaining encryption keys and of encoding messages which must travel encoded between base stations linking the first and second mobile cores and served by the existing core.

9. A system according to claim 8 and wherein said message is decoded by the second mobile core, and is sent in the clear between base stations served by the second mobile core, thereby relieving the nodes served by the second mobile core of the task of obtaining decryption keys and of decoding messages which must travel encoded between base stations linking the first and second mobile cores and served by the existing core.

10. A system according to claim 4 wherein at least one pair of mobile cores within the plurality of mobile cores communicate via a GRE tunnel.

11. A system according to claim 4 wherein said plurality of mobile cores comprises at least three mobile cores

and wherein at least two pairs of mobile cores within the plurality of mobile cores communicate via at least two GRE tunnels respectively,

and wherein at least one pair of mobile cores within the plurality of mobile cores are not directly interconnected via a GRE tunnel but said at least two GRE tunnels form a path of GRE tunnels indirectly interconnecting said pair of mobile cores not directly interconnected.

12. A system according to claim 4 wherein at least one pair of mobile cores within the plurality of mobile cores communicate via an IP tunnel.

13. A system according to claim 1 wherein at least some of the nodes are base stations defining cells and wherein the cores have only inter-cell mobility.

14. A system according to claim 1 wherein at least some of the nodes are base stations defining cells and wherein at least one of the cores also has intra-cell mobility.

15. A system according to claim 1 wherein at least one MBSFN channel is used to build a backhauling network.

16. A cellular communication method operative in conjunction with a population of cellular communication network nodes comprising a stationary core, a plurality of base

stations, the method comprising:

providing mobile station functionality at at least one node; and

providing client tunneling functionality co-located with the node having mobile station functionality which client tunneling functionality is operative to use network topology information obtained via the mobile station functionality to initiate generation of a tunnel having a first end at the node and a second far end at the stationary core,

wherein said at least one node having mobile station functionality is operative, when informed by at least one neighboring node that an individual tunnel currently exists, to inform at least one additional neighboring node that said individual tunnel currently exists, and when informed by at least one neighboring node that an individual tunnel no longer exists, to inform at least one additional neighboring node that said individual tunnel no longer exists.

17. A cellular communication system comprising:

a population of cellular communication network nodes comprising a stationary core, a plurality of base stations, and at least one node having mobile station functionality; and

a client tunneling functionality co-located with the node having mobile station functionality which is operative to use network topology information obtained via the mobile station functionality to initiate generation of a tunnel having a first end at the node and a second far end at the stationary core,

wherein said at least one node having mobile station functionality functions as a mobile core including employing said tunnel to carry out at least one core functionality,

wherein said at least one node having mobile station functionality comprises a plurality of mobile cores being operative for communicating with one another and for simultaneously serving the population of nodes including providing communication links between each pair of nodes within the population of nodes wherein at least one communication link, between a first pair of nodes, is provided by a first core from among the plurality of mobile cores and wherein at least one communication link, between a second pair of nodes from among the plurality of mobile cores, is provided by a second core from among the plurality of mobile cores, and

wherein each said mobile core includes co-located mobile station functionality.

18. A system according to claim 17 wherein said at least one node having mobile station functionality functions as a mobile core including employing said tunnel to carry out at least one core functionality.

19. A system according to claim 18 wherein said at least one node having mobile station functionality comprises a plurality of mobile cores being operative for communicating with one another and for simultaneously serving the population of nodes including providing communication links between each pair of nodes within the population of nodes wherein at least one communication link, between a first pair of nodes, is provided by a first core from among the plurality of mobile cores and wherein at least one communication link, between a second pair of nodes from among the plurality of mobile cores, is provided by a second core from among the plurality of mobile cores.

20. A system according to claim 19 wherein at least one pair of first and second mobile cores within the plurality of mobile cores communicate via existing base stations served by an existing core and wherein at least one node served by the first core communicates with at least one node served by the second core via a route including at least one hop between base stations served by the first mobile core, followed by at least one hop between base stations linking the first and second mobile cores and served by the existing core, followed by at least one hop between base stations served by the second mobile core.

21. A system according to claim 19 wherein at least one pair of mobile cores within the plurality of mobile cores communicate via a GRE tunnel.

22. A system according to claim 19 wherein said plurality of mobile cores comprises at least three mobile cores

and wherein at least two pairs of mobile cores within the plurality of mobile cores communicate via at least two GRE tunnels respectively,

and wherein at least one pair of mobile cores within the plurality of mobile cores are not directly interconnected via a GRE tunnel but said at least two GRE tunnels form a path of GRE tunnels indirectly interconnecting said pair of mobile cores not directly

interconnected.

23. A system according to claim 19 wherein at least one pair of mobile cores within the plurality of mobile cores communicate via an IP tunnel.

24. A system according to claim 17 wherein said network topology information obtained via the mobile station functionality comprises at least one routing table obtained from an attach message sent to said node having mobile station functionality upon attachment of said node to said stationary core via one of said plurality of base stations.

25. A system according to claim 17 wherein at least some of the nodes are base stations defining cells and wherein the cores have only inter-cell mobility.