CLAIMS

WHAT IS CLAIMED IS:

1. A method of dynamically allocating system resources, comprising:

determining whether at least one mobile device requires additional resources or requires resource de-allocation;

generating a supplemental assignment that de-assigns the resources and is indicated as a supplemental assignment message; and

transmitting the supplemental assignment to the at least one mobile device.

2. The method of claim 1, generating comprises identifying one resource that is indicative of multiple resources to remain as part of the assignment after de-assignment.

3. The method of claim 1, generating comprises explicitly identifying multiple resource to remain as part of the assignment after de-assignment

4. The method of claim 1, generating comprises explicitly identifying multiple resource to remove as part of the de-assignment.

5. The method of claim 1, generating comprises setting a flag in the supplemental assignment message to identify the message as a supplemental assignment.

6. The method of claim 1, wherein the flag consists of one bit.

7. A system that facilitates supplementing resource assignments for mobile devices, comprising:

a supplemental component that receives information related to increased or decreased resource requirements of at least one of the plurality of mobile devices and generates a supplemental assignment to allocate additional resources or de-allocate existing resources to satisfy the resource requirements of the at least one mobile device; and

a transceiver that transmits supplemental assignment messages to the plurality of mobile devices.

8. The apparatus of claim 7, the supplemental component identifies one resource that is indicative of multiple resources to remain as part of the assignment after de-assignment.

9. The apparatus of claim 7, the supplemental component explicitly identifies multiple resource to remain as part of the assignment after de-assignment

10. The apparatus of claim 7, the supplemental component explicitly identifies multiple resources to remove as part of the de-assignment.

11. The apparatus of claim 7, the supplemental component sets a flag in the supplemental assignment message to identify the message as a supplemental assignment.

12. The apparatus of claim 11, wherein the flag consists of one bit.

13. An apparatus comprising:

means for determining whether least one mobile device requires additional resources or requires resource de-allocation;

means for generating a supplemental assignment that de-assigns the resources and is indicated as a supplemental assignment message; and

a transmitter that transmits the supplemental assignment to the at least one mobile device.

14. The apparatus of claim 13, the means for generating comprises means for identifying one resource that is indicative of multiple resources to remain as part of the assignment after de-assignment.

15. A mobile device, comprising:

a processor configured to identify whether an assignment message is a supplemental assignment and to determine whether the supplemental assignment is intended to de-assign resources; and

a memory coupled to the processor.

16. The apparatus of claim 15, the processor is configured to determine resources being de-assigned by the supplemental assignment.

17. The apparatus of claim 15, the processor is configured to determine multiple resources being de-assigned from one resource indicated in the supplemental assignment.

18. The apparatus of claim 15, the processor is configured to determine multiple resources being de-assigned from multiple resources indicated in the supplemental assignment.

19. The apparatus of claim 15, the processor is configured to determine whether the assignment is a supplemental assignment according to a flag in the assignment message.

20. The apparatus of claim 19, wherein the flag consists of one bit.

21. A method of processing assignments, comprising:

determining whether a received assignment message is a supplemental assignment;

if the assignment message is a supplemental assignment, then determining whether the supplemental assignment is intended to de-assign resources; and

if the supplemental assignment is a de-assignment, de-assigning resources based upon resources identified in the assignment message.

22. The method of claim 21, de-assigning comprises de-assigning multiple resources based upon one identified resource that is indicative of multiple resources to remain as part of the assignment after de-assignment.

23. The method of claim 21, de-assigning comprises de-assigning multiple resources based upon multiple identified resources that are indicative of multiple resources to remain as part of the assignment after de-assignment.

24. The method of claim 21, de-assigning comprises de-assigning multiple resources that are the same as multiple identified resources that are indicative of multiple resources to remain as part of the assignment after de-assignment.

25. The method of claim 21, determining comprises determining according to a flag in the assignment message to identify the message as a supplemental assignment.

26. The method of claim 25, wherein the flag consists of one bit.

27. An apparatus comprising:

means for determining whether a received assignment message is a supplemental assignment;

means for, if the assignment message is a supplemental assignment, then determining whether the supplemental assignment is intended to de-assign resources; and

means for, if the supplemental assignment is a de-assignment, de-assigning resources based upon resources identified in the assignment message.

28. The apparatus of claim 27, means for de-assigning comprises means for de-assigning multiple resources based upon one identified resource that is indicative of multiple resources to remain as part of the assignment after de-assignment.

29. The apparatus of claim 27, means for de-assigning comprises means for de-assigning multiple resources based upon multiple identified resources that are indicative of multiple resources to remain as part of the assignment after de-assignment.

30. The apparatus of claim 27, means for de-assigning comprises means for de-assigning multiple resources that are the same as multiple identified resources that are indicative of multiple resources to remain as part of the assignment after de-assignment.

31. The apparatus of claim 27, means for determining comprises means for determining according to a flag in the assignment message to identify the message as a supplemental assignment.

32. The apparatus of claim 31, wherein the flag consists of one bit.

CLAIMS

1. A method of dynamically allocating system resources in a wireless networking environment, comprising:

transmitting a persistent non-supplemental resource assignment to at least one mobile device connected to a wireless network to assign an initial set of resources to the at least one mobile device;

determining whether the at least one mobile device requires additional resources;

generating a supplemental resource assignment that assigns at least one additional resource to the at least one mobile device;

transmitting the supplemental resource assignment to the at least one mobile device to augment a resource set assigned to the at least one mobile device; and

setting types of the non-supplemental resource assignment and the supplemental resource assignment to a designating bit of a system resource block.

2. The method of claim 1, generating the supplemental resource assignment comprises assessing a set of all resources and determining a subset of available resources.

3. The method of claim 1, further comprising selecting available resources from the subset of available resources for supplemental resource assignment that minimize supplemental assignment message size.

4. The method of claim 3, further comprising selecting contiguous resources when more than one additional resource is required to supplement an assignment for the at least one mobile device.

5. The method of claim 4, further comprising generating a contiguous supplemental resource assignment for the at least one mobile device.

6. The method of claim 3, further comprising generating a non-contiguous supplemental resource assignment when fewer than three additional resources are required to supplement an assignment of the at least one mobile device.

7. The method of claim 1, further comprising verifying receipt of the persistent non-supplemental resource assignment.

8. The method of claim 7, verification of receipt of the persistent non-supplemental resource assignment comprises transmitting a verification message from the at least one mobile device to the network.

9. The method of claim 8, further comprising providing an indication in the verification message that the persistent non-supplemental resource assignment was successfully received and decoded over a reverse link.

10. The method of claim 8, further comprising providing an acknowledgement in the verification message that the persistent non-supplemental resource assignment was successfully received and decoded over a forward link.

11. A system for supplementing resource assignments for mobile devices, comprising:

an assignment component that generates non-supplemental resource assignments for a plurality of respective mobile devices, wherein the non-supplemental resource assignments are persisted until a subsequent non-supplemental resource assignment is received by the mobile device to which the assignment corresponds;

a supplemental component that receives information related to increased resource requirements of at least one of the plurality of mobile devices and generates a supplemental resource assignment to allocate additional resources to satisfy the increased resource requirements of the at least one mobile device;

a transceiver that transmits assignment messages to the plurality of mobile devices; and

a system resource block having a designating bit to which types of the non-supplemental resource assignment and the supplemental resource assignment are set.

12. The system of claim 11, the supplemental component generates supplemental resource assignments when the assignment component employs a message format that limits resource subset assignability.

13. The system of claim 12, the message format is at least one of a contiguous block

assignment technique, a channel table assignment technique, and a known-user-order assignment technique.

14. The system of claim 13, the supplemental component generates supplemental resource assignments in a format comprising at least one of a block index list and a contiguous block of resources.

15. The system of claim 11, further comprising a verification component that receives verification messages, through the transceiver, from mobile devices indicating receipt and successful decode of non-supplemental resource assignments.

16. The system of claim 15, the verification component rejects resource assignments to mobile devices that do not transmit verification messages, and rejected assigned resources retain available status.

17. The system of claim 11, further comprising an artificial intelligence (AI) component that makes inferences related to optimization of supplemental resource assignment generation with regard to transmission costs.

18. The system of claim 17, the AI component infers a most efficient supplemental message format based at least in part on information related to resource availability at the time of supplemental resource assignment generation.

19. The system of claim 11, a resource is at least one of a transmission channel, a frequency, a transmission time slot, and a code slot.

20. The system of claim 11, a mobile device comprises a wireless communication device.

21. The system of claim 11, a mobile device is at least one of a cellular phone, a laptop, and a PDA.

22. An apparatus for wireless network resource management, comprising:

means for transmitting a persistent non-supplemental resource assignment to

at least one mobile device connected to a wireless network to assign an initial set of resources to the at least one mobile device;

means for determining whether the at least one mobile device requires additional resources;

means for generating a supplemental resource assignment that assigns at least one additional resource to the at least one mobile device;

means for transmitting the supplemental resource assignment to the at least one mobile device to augment a resource set assigned to the at least mobile device; and

a system resource block having a designating bit to which types of the non-supplemental resource assignment and the supplemental resource assignment are set.

23. The apparatus of claim 22, the means for generating a supplemental resource assignment comprises means for assessing all resources in the wireless network and identifying a subset of available resources.

24. The apparatus of claim 23, the means for generating a supplemental resource assignment further generates the supplemental resource assignment in a message having a format that minimizes transmission overhead costs.

25. The apparatus of claim 24, the message describes supplemental resources in contiguous format when more than one additional resource is required by the at least one mobile device and when sufficient contiguous resources are available.

26. The apparatus of claim 24, the message describes supplemental resources in block index list format when the at least one mobile device requires fewer than three additional resources or when sufficient contiguous resources are not available to accommodate the detected resource insufficiency at the at least one mobile device.

27. The apparatus of claim 22, further comprising means for verifying that an assignment has been received and successfully decoded by the at least one mobile device.

28. The apparatus of claim 27, further comprising means for identifying resources

described in verified assignments as unavailable resources to mitigate conflicting assignment of the resources.

29. A computer-readable medium having stored thereon computer-executable instructions for:

providing initial persistent non-supplemental resource assignments to devices communicating over a wireless network that are persisted until supplemented or replaced;

assessing resource assignments to the devices communicating over the wireless network;

determining whether a device requires additional resources;

providing a supplemental resource assignment to the device that augments an existing persistent resource assignment to the device without requiring a complete replacement assignment; and

setting types of the non-supplemental resource assignment and the supplemental resource assignment to a designating bit of a system resource block.

30. The computer-readable medium of claim 29, further comprising computer-executable instructions for verifying receipt of an initial persistent non-supplemental resource assignment by a device before permitting a supplemental resource assignment to be transmitted to the device.

31. The computer-readable medium of claim 29, further comprising computer-executable instructions for assessing available resources for supplemental resource assignment and selecting a supplemental subset of resources that minimizes supplemental assignment message size.

32. A microprocessor that executes instructions for supplementing a resource assignment to a device communicating over a wireless network, the instructions comprising:

providing an initial persistent non-supplemental resource assignment to the device;

detecting an increased resource requirement for the device; and

generating and transmitting a supplemental resource assignment to the device

that augments the initial non-supplemental resource assignment to the device,

wherein the microprocessor comprises a system resource block having a designating bit to which types of the non-supplemental resource assignment and the supplemental resource assignment are set.

33. A mobile device for communicating over a wireless network, comprising:

a component that receives an initial persistent resource assignment and asserts control over resources identified in the initial persistent non-supplemental resource assignment;

a component that provides an indication of increased resource requirements, receives a supplemental resource assignment, and asserts control over one or more resources in the supplemental resource assignment to augment a set of resources assigned to the mobile device by the initial persistent resource assignment; and

a system resource block having a designating bit to which types of the non-supplemental resource assignment and the supplemental resource assignment are set.

34. The mobile device of claim 33, wherein the mobile device is at least one of a cellular phone, a smartphone, a laptop, a satellite radio, a GPS device, a handheld computing device, a handheld communication device, and a PDA.

35. The mobile device of claim 33, further comprising a verification component that generates a verification message to indicate receipt of a resource assignment and transmits over the wireless network.

36. The mobile device of claim 35, the verification message indicates whether resources identified in the resource assignment have been successfully assigned to the mobile device.

37. The mobile device of claim 35, the resource assignment is at least one of the initial persistent resource assignment and the supplemental resource assignment.

38. The mobile device of claim 33, the initial persistent resource assignment is a persistent assignment that is retained by the mobile device until receipt of at least one of a new persistent assignment and a supplemental resource assignment.

39. The mobile device of claim 33, wherein the mobile device provides an indication of an increased resource requirement to the wireless network to invoke the supplemental resource assignment.

40. A mobile device microprocessor that executes instructions for supplementing a resource assignment to the mobile device when communicating over a wireless network, the instructions comprising:

receiving an initial persistent non-supplemental resource assignment;

indicating an increased resource requirement;

receiving a supplemental resource assignment; and

integrating resources identified in the supplemental resource assignment to a resource set identified in the initial persistent non-supplemental resource assignment,

the instructions further comprising setting types of the non-supplemental resource assignment and the supplemental resource assignment to a designating bit of a system resource block.

41. A method of securing resources for utilization by a mobile device, comprising:

receiving an initial persistent non-supplemental resource assignment at the mobile device;

asserting control over resources identified in the persistent non-supplemental resource assignment; providing an indication of increased resource requirements;

receiving a supplemental resource assignment;

asserting control over resources identified in the supplemental resource assignment to augment a resource set obtained from the non-supplemental resource assignment; and

setting types of the non-supplemental resource assignment and the supplemental resource assignment to a designating bit of a system resource block.