

CLAIMS

We claim:

1. A method for managing channel selection in a dynamic spectrum management network comprising the steps of:
 - receiving a spectrum allocation request;
 - based on the source of the spectrum allocation request, checking for available channels;
 - based on the source of the spectrum allocation request, collecting sensing and usage data for the available channels;
 - providing the channel usage data to an entity that transmitted the spectrum allocation request.
2. The method of claim 1, wherein the spectrum allocation request is received at a wireless transmit and receive unit (WTRU).
3. The method of claim 2, wherein the spectrum allocation request is received by a coexistence manager (CM) within the WTRU.
4. The method of claim 3, wherein the CM checks a database for a list of the available channels based on a geographical location.
5. The method of claim 1, further comprising providing a ranked channel candidate list to the entity that transmitted the spectrum allocation request.
6. The method of claim 1, wherein the entity that transmitter the spectrum allocation request is a base station (HeNB)
7. The method of claim 6, wherein on a condition that the HeNB receives the channel usage information, the HeNB selects the channel.

8. The method of claim 7, wherein the HeNB informs the CM regarding the channel selection.

9. The method of claim 6, further comprising registering the HeNB to a database of spectrum users.

10. A method for managing channel selection in a dynamic spectrum management network comprising the steps of:

- sending a spectrum allocation request;
- checking a database for available channels;
- providing the channel usage data to an entity that transmitted the spectrum allocation request;
- selecting a channel or channels to use in response to the request; and
- updating the database to indicate that the channel or channels are in use.

11. The method of claim 10, wherein the database that is checked comprises geolocation information regarding spectrum users.

12. The method of claim 10, further comprising checking a coexistence database comprising information about secondary spectrum users that may be using channels.

13. The method of claim 11, further comprising checking a coexistence database comprising information about secondary spectrum users that may be using channels.

14. The method of claim 10, further comprising sending transmission policies regarding spectrum usage including setting a maximum transmission power.

15. The method of claim 10, wherein the channel is formatted as a set of

information elements wherein each information element defines a license exempt channel.

16. The method of claim 15, wherein the information element comprises a useable physical cell identifier (PCI).

17. The method of claim 16, further determining a combination of channel and PCI for the requesting entity to use.

18. The method of claim 17, further comprising updating a database on a condition that a PCI has been determined.

19. The method of claim 10, further comprising reconfiguring a wireless transmit and receive unit (WTRU) on a condition that a channel has been selected.

20. The method of claim 19, further comprising updating the database based on the reconfiguration.