WHAT IS CLAIMED IS:

1. A communication device comprising:

a transceiver adapted to exchange data using a wireless communication protocol that allows a device to maintain concurrent connections with up to a maximum number of concurrently connected devices;

a processor; and

a memory storing executable code, which when executed by the processor, causes the communication device to perform operations including:

determining a set of peer devices within a communication range of the communication device using the wireless communication protocol, the peer devices being part of a device network having a plurality of device clusters, each including one or more devices that belong to multiple ones of the plurality of device clusters;

determining whether any of the peer devices is part of a device cluster having less than a maximum number of device members;

when a peer device in the set of peer devices within the communication range of the communication device is determined to be part of an existing device cluster having less than the maximum number of device members, adding the communication device to the existing device cluster; and

when each peer device in the set of peer devices within the communication range of the communication device is determined to be part of a full device cluster having the maximum number of device members, creating a new device cluster and adding the communication device and a plurality of peer devices in the set of peer devices meeting a signal strength criteria to the new device cluster, such that the new device cluster includes at least one device included in another of the device clusters.

2. The communication device of claim 1, wherein the signal strength criteria is the highest two signal strengths detected by the communication device.

3. The communication device of claim 1, wherein the maximum number of device members is equal to the maximum number of concurrently connected devices allowed by the wireless communication protocol.

4. The communication device of claim 1, wherein subsequent to adding the communication device to either the existing device cluster or the new device cluster, in response to the communication device losing connectivity with other peer devices in the device cluster that the communication device is part of, the communication device attempts a predetermined number of times to re-establish connection with the other peer devices in the device cluster.

5. The communication device of claim 4, wherein after the communication device has failed to re-establish connection with the other peer devices in the device cluster, the communication device establishes connectivity with a plurality of devices that are not part of the device cluster, and either joins another device cluster or creates another new device cluster.

6. The communication device of claim 1, wherein the communication device locally stores network state information including a cluster identifier for each device cluster in the device network, and a device identifier for each device member of a corresponding device cluster.

7. The communication device of claim 6, wherein the operations further include:

receiving network state information from a peer device; and

when the received network state information is newer than the locally stored network state information and the received network state information is different than the locally stored network state information, updating the locally stored network state information with the received network state information.

8. The communication device of claim 6, wherein the device network includes a plurality of access devices and a plurality of user communication devices.

9. The communication device of claim 8, wherein the locally stored network state information further includes a mapping of which user device is interacting with which access device to conduct a transaction.

10. The communication device of claim 8, wherein the device network further includes a plurality of repeater devices.

11. A method for establishing a device network having a plurality of device clusters, each including one or more devices that belong to multiple ones of the plurality of device clusters, the method comprising:

determining, by a communication device, a set of peer devices within a communication range of the communication device using a wireless communication protocol, wherein the wireless communication protocol allows a device to maintain concurrent connections with up to a maximum number of concurrently connected devices;

determining, by the communication device, whether any of the peer devices is part of a device cluster having less than a maximum number of device members;

when a peer device in the set of peer devices within the communication range of the communication device is determined to be part of an existing device cluster having less than the maximum number of device members, updating, by the communication device, that existing device cluster to include the communication device; and

when each peer device in the set of peer devices within the communication range of the communication device is determined to be part of a full device cluster having the maximum number of device members, creating, by the communication device, a new device cluster to include the communication device and a plurality of peer devices in the set of peer devices meeting a signal strength criteria, such that the new device cluster includes at least one device included in another of the device clusters.

12. The method of claim 11, wherein the signal strength criteria is the highest two signal strengths detected by the communication device.

13. The method of claim 11, wherein the maximum number of device members is equal to the maximum number of concurrently connected devices allowed by the wireless communication protocol.

14. The method of claim 11, wherein subsequent to adding the communication device to either the existing device cluster or the new device cluster, in response to the communication device losing connectivity with other peer devices in the device cluster that the communication device is part of, the communication device attempts a predetermined number of times to re-establish connection with the other peer devices in the device cluster.

15. The method of claim 14, wherein after the communication device has failed to re-establish connection with the other peer devices in the device cluster, the communication device establishes connectivity with a plurality of devices that are not part of the device cluster, and either joins another device cluster or creates another new device cluster.

16. The method of claim 11, wherein the communication device locally stores network state information including a cluster identifier for each device cluster in the device network, and a device identifier for each device member of a corresponding device cluster.

17. The method of claim 16, further comprising:

receiving, by the communication device, network state information from a peer device; and

when the received network state information is newer than the locally stored network state information and the received network state information is different than the locally stored network state information, updating, by the communication device, the locally stored network state information with the received network state information.

18. The method of claim 16, wherein the device network includes a plurality of access devices and a plurality of user devices.

19. The method of claim 18, wherein the network state information further includes a mapping of which user device is interacting with which access device to conduct a transaction.

20. The method of claim 18, wherein the device network further includes a plurality of repeater devices.