**Definition of peer-to-peer mode of operation:**

Communications directly between remote nodes (such as mobiles, handhelds, and/or waysides) without passing through any central/office components. Peer-to-peer communications must function when the two endpoint remote nodes are within direct communication range regardless of whether there is base coverage or not. Peer-to-peer communications can be point-to-point (unicast), multicast, or broadcast.

**Definition of point-to-point communication:**

Communication between 2 and only 2 endpoint nodes, i.e., unicast - not broadcast and not multicast.

**Peer-to-peer related requirements for 802.16t:**

1. All implementations of this standard shall include a peer-to-peer mode of communication between remotes without requiring the use of a base station.
2. All implementations of this standard shall allow peer-to-peer communication between remotes with the use of a base station (BS).
   1. *Can this be provided already with the PtMP air interface protocol (e.g., how well does this PtMP protocol support situations where multiple pairs of MSs need to communicate at random times and these MSs are moving in and out of range of a BS)?*
   2. *Should all communications between two remotes pass through BS or communicated directly on a timeslot and a frequency allocated by the BS when BS coverage exists?*
   3. *Can it be CSMA or will scheduling work?*
3. All implementations of this standard shall allow peer-to-peer communication between remotes with the use of a relay station (RS).
4. All implementations of this standard shall use peer-to-peer mode when transmitting a message that is designated as a peer-to-peer message.
5. All implementations of this standard shall allow an alternative communication path to be selected in which a message is repeated by a base station or a relay station, when the message cannot be successfully communicated via a direct communication link between the remotes, when operating in the peer-to-peer mode.
6. All implementations of this standard shall allow dedicated air interface resources to be statically assigned for peer-to-peer communications.
7. Where base station coverage exists, all implementations of this standard shall allow dedicated air interface resources to be dynamically assigned by a base station for peer-to-peer communications.
8. All implementations of this standard shall use Carrier Sense Multiple Access (CSMA) protocol when communicating in peer-to-peer mode.
9. All implementations of this standard shall allow for the remote radios to operate as a peer-to-peer repeater station.

Note: There can be one or more relay node between a pair of endpoint remotes.