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

Communications between remote nodes (such as mobiles, handhelds, and/or waysides) in one of the following two modes:

1. Direct peer-to-peer communication when no infrastructure is used. This mode includes the usage of a repeater for range extension if needed.
2. Peer-to-peer communication through base station infrastructure.

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

1. The IEEE802.16t air interface protocol shall use a peer-to-peer designator in the MAC Protocol Data Unit (PDU) to indicate a peer-to-peer PDU.
2. IEEE802.16t direct peer-to-peer communication mode shall utilize:
   * CSMA/CA MAC layer and
   * a distinct channel or channel pair exclusively for direct peer-to-peer communication (i.e., distinct from the PtMP band).
3. The IEEE802.16t air interface protocol shall include a direct peer-to-peer mode of communication between remotes without requiring the use of a base station nor repeater.
4. The IEEE802.16t air interface protocol shall include a direct peer-to-peer mode of communication between remotes without requiring the use of a base station but with the use of one or more Relay Stations (RS) for range extension.
5. The IEEE802.16t air interface protocol shall include a peer-to-peer communication mode between remotes with the use of base station infrastructure.

Note: This requirement retains the existing PtMP functionality for use when direct peer-to-peer communication is unsuccessful for a designated packet.

1. If a direct peer-to-peer communication attempt does not yield a required acknowledgement, the sender is permitted to select an alternative communication path through a base station or relay station. For that purpose, the IEEE802.16t air interface protocol shall use a designator in the MAC PDU to allow the sender to select such an alternative communication path through a base station or relay station.