CLAIMS

1. An apparatus for wireless communications, comprising:

a processing system configured to:

perform a sector level sweep (SLS) procedure between the apparatus and at least one wireless device; and

generate a first frame having a plurality of beamforming training fields to be output for transmission to the at least one wireless device using a directional transmit antenna mode and an indication whether the at least one wireless device is to be in an omni-directional receive antenna mode to receive the plurality of beamforming training fields, wherein the indication is provided via one or more bits in a field of an enhanced directional multi-gigabit (EDMG) header of the first frame; and

a first interface configured to output the first frame for transmission after performing at least a portion of the SLS procedure.

2. The apparatus of claim 1, wherein:

the processing system is further configured to perform the SLS procedure to establish a link between the apparatus and the at least one wireless device; and

the first frame is output for transmission after establishing the link between the apparatus and the at least one wireless device.

3. The apparatus of claim 1, wherein:

the processing system is further configured to perform the SLS procedure to establish a link between the apparatus and the at least one wireless device; and

the first frame is output for transmission without establishing the link between the apparatus and the at least one wireless device.

4. The apparatus of claim 1, wherein:

the at least one wireless device comprises a first type of device having enhanced capability relative to a second type of device; and

the indication is decodable by both the first type of device and the second type of device.

5. The apparatus of claim 1, wherein:

the at least one wireless device comprises a first type of device having enhanced capability relative to a second type of device; and

the indication is decodable by the first type of device but not by the second type of device.

6. An apparatus for wireless communications, comprising:

a first interface configured to:

perform a sector level sweep (SLS) procedure to establish a link between the apparatus and a wireless device; and

obtain, from the wireless device, a first frame after performing at least a portion of the SLS procedure; and

a processing system configured, based on an indication provided via one or more bits in a field of an enhanced directional multi-gigabit (EDMG) header of the first frame, to cause the apparatus to switch to or stay in an omni-directional receive antenna mode to obtain a plurality of beamforming training fields in a second portion of the first frame.

7. The apparatus of claim 6, wherein:

the processing system is further configured to perform the SLS procedure to establish the link between the apparatus and the wireless device; and

the first frame is obtained after establishing the link between the apparatus and the wireless device.

8. The apparatus of claim 6, wherein:

the processing system is further configured to perform the SLS procedure to establish the link between the apparatus and the wireless device; and

the first frame is obtained without establishing the link between the apparatus and the wireless device.

9. The apparatus of claim 6, wherein:

the apparatus comprises a first type of device having enhanced capability relative to a second type of device; and

the indication is decodable by both the first type of device and the second type of device.

10. The apparatus of claim 6, wherein:

the apparatus comprises a first type of device having enhanced capability relative to a second type of device; and

the indication is decodable by the first type of device but not by the second type of device.

11. A wireless station, comprising:

a processing system configured to:

perform a sector level sweep (SLS) procedure between the wireless station and at least one wireless device; and

generate a first frame having a plurality of beamforming training fields to be output for transmission to the at least one wireless device using a directional transmit antenna mode and an indication whether the at least one wireless device is to be in an omni-directional receive antenna mode to receive the plurality of beamforming training fields, wherein the indication is provided via one or more bits in a field of an enhanced directional multi-gigabit (EDMG) header of the first frame; and

a transmitter configured to transmit the first frame for transmission after performing at least a portion of the SLS procedure.

12. The apparatus of claim 6, further comprising at least one antenna via which the first frame is obtained, wherein the apparatus is configured as a wireless station.