exchanges for wireless local area network (WLAN) sensing in order to reduce sounding overhead.

[0007a] In an aspect, the present disclosure refers to a communication apparatus comprising: a transceiver configured to receive signals in a wireless local area network, WLAN; and circuitry configured to demodulate and decode the signals, the decoded signals comprising a first physical layer protocol data unit, PPDU, and a second PPDU, wherein the circuitry is configured to perform full channel measurement based on a first physical layer, PHY, header of the first PPDU and a second PHY header of the second PPDU, the first PHY header and the second PHY header include long training fields, LTFs, for estimating channel quality, the second PPDU is received by the transceiver subsequent to the first PPDU, the circuitry is configured to calculate a first channel measurement parameter based on the first PPDU, the circuitry is configured to calculate a second channel measurement parameter based on the second PPDU, the circuitry is configured to perform the full channel measurement based on a difference between the first channel measurement parameter and the second channel measurement parameter exceeding a threshold value, the transceiver is configured to receive a threshold value signal in one of a beacon frame, a unicast management frame or a probe response frame, the circuitry is configured to demodulate and to decode the threshold value signal to derive the threshold value, and a null data packet, NDP, or a staggered PPDU is used in the full channel measurement.

[0007b] In an example, the present disclosure refers to a communication apparatus comprising: a transceiver, which in operation, receives signals in a wireless local area

network (WLAN); and circuitry, which in operation, demodulates and decodes the signals, the decoded signals comprising an indication of threshold crossing by an associated communication apparatus, wherein the circuitry, in operation, initiates a WLAN sensing procedure to perform full channel measurement based on the indication of threshold crossing by the associated communication apparatus.

[0008] In an example, the techniques disclosed herein feature a communication apparatus including a transceiver and circuitry. The transceiver, in operation, receives signals from a WLAN. The circuitry, in operation, demodulates and decodes the signals, the decoded signals comprising a first physical layer protocol data unit (PPDU) and a second PPDU, wherein the circuitry, in operation, performs full channel measurement based on a first physical layer (PHY) header of the first PPDU and a second PHY header of the second PPDU, wherein the first PHY header and the second PHY header include long training fields (LTFs) for estimating channel quality.

[0009] It should be noted that general or specific embodiments may be implemented as a system, a method, an integrated circuit, a computer program, a storage medium, or any selective combination thereof.

[0010] Additional benefits and advantages of the disclosed embodiments will become apparent from the specification and drawings. The benefits and/or advantages may be individually obtained by the various embodiments and features of the specification and drawings, which need not all be provided in order to obtain one or more of such benefits and/or advantages.

BRIEF DESCRIPTION OF THE FIGURES

[0011] In the following, exemplary embodiments are described in more detail with reference to the attached figures and drawings.

[0012] **FIG. 1** shows an exemplary wireless local area network (WLAN) system and communication apparatuses operating;

CLAIMS

What is claimed is:

1. A communication apparatus comprising:

a transceiver configured to receive signals in a wireless local area network, WLAN; and

circuitry configured to demodulate and decode the signals, the decoded signals comprising a first physical layer protocol data unit, PPDU, and a second PPDU,

wherein,

the circuitry, is configured to perform full channel measurement based on a first physical layer, PHY, header of the first PPDU and a second PHY header of the second PPDU,

the first PHY header and the second PHY header include long training fields, LTFs, for estimating channel quality,

the second PPDU is received by the transceiver subsequent to the first PPDU;

the circuitry is configured to calculate a first channel measurement parameter based on the first PPDU;

the circuitry is configured to calculate a second channel measurement parameter based on the second PPDU;

the circuitry is configured to perform the full channel measurement based on a difference between the first channel measurement parameter and the second channel measurement parameter exceeding a threshold value;

the transceiver is configured to receive a threshold value signal in one of a beacon frame, a unicast management frame or a probe response frame;

the circuitry is configured to demodulate and to decode the threshold value signal to derive the threshold value; and

a null data packet, NDP, or a staggered PPDU is used in the full channel measurement.

2. The communication apparatus in accordance with Claim 1 wherein the first channel measurement parameter and the second channel measurement parameter comprise one of time reversal resonating strength, TRRS, signal-to-noise ratio, SNR, or detected channel energy.

3. The communication apparatus in accordance with Claim 1 wherein the circuitry is configured to generate an indication of threshold crossing based on the difference between the first channel measurement parameter and the second channel measurement parameter

exceeding the threshold value, and wherein the transceiver is configured to transmit the indication of threshold crossing in an uplink frame.

4. The communication apparatus in accordance with Claim 3 wherein the uplink frame comprises one of a Block Ack frame, a sounding frame or a unicast action frame.

5. The communication apparatus in accordance with any of the preceding claims wherein the circuitry is configured to initiate a beamforming procedure based on the first PHY header of the first PPDU and the second PHY header of the second PPDU.