CLAIMS

[Claim 1]

A communication apparatus comprising:

reception means for receiving a probe request frame from another communication apparatus;

decision means for deciding, as capability information indicating a capability related to multi-link communication that is performed via a plurality of links established with a partner apparatus, the capability information to be included in a probe response frame corresponding to a frequency band or a frequency channel of which selection is based on information about a frequency band or a frequency channel included in the probe request frame received by the reception means from the another communication apparatus; and

transmission means for transmitting the probe response frame including the capability information corresponding to the frequency band or the frequency channel decided by the decision means.

[Claim 2]

The communication apparatus according to Claim 1, further comprising:

determination means for determining, in a case where the probe request frame is received by the reception means, whether the another communication apparatus is configured to execute multi-link communication that is performed via the plurality of links established with the partner device,

wherein, in a case where the determination means determines that the another communication apparatus is configured to execute the multi-link communication, the decision means decides to include the capability information, and in a case where the determination means determines that the another communication apparatus is not

configured to execute the multi-link communication, the decision means decides not to include the capability information.

[Claim 3]

The communication apparatus according to Claim 1 or 2, wherein, in a case where the received probe request frame includes information indicating a frequency channel, the decision means decides to include, in the probe response frame, only the capability information corresponding to the frequency channel indicated by the information included in the received probe request frame.

[Claim 4]

The communication apparatus according to Claim 1 or 2, wherein, in a case where the received probe request frame includes information indicating a frequency channel, the decision means decides to include, in the probe response frame, only the capability information corresponding to the frequency band including the frequency channel indicated by the information included in the received probe request frame.

[Claim 5]

The communication apparatus according to Claim 1 or 2, wherein, in a case where the received probe request frame includes information indicating a frequency band, the decision means decides to include, in the probe response frame, only the capability information corresponding to the frequency band indicated by the information included in the received probe request frame.

[Claim 6]

The communication apparatus according to any one of Claims 1 to 5, wherein the transmission means transmits the probe response frame including, as the capability information, an element indicating a capability related to the multi-link communication.

[Claim 7]

The communication apparatus according to Claim 6, wherein the element indicating the capability related to the multi-link communication is a multi-link element compliant with Institute of Electrical and Electronics Engineers (IEEE) 802.11 series standards, and the decision means decides to include, in the probe response frame, per link info corresponding to a frequency band or a frequency channel of which selection is based on information indicating the frequency band or the frequency channel included in the received probe request frame.

[Claim 8]

The communication apparatus according to Claim 6 or 7, wherein the transmission means transmits the probe response frame including, as the capability information, a high throughput (HT) capabilities element indicating capability information for communication compliant with the IEEE 802.11 n standard.

[Claim 9]

The communication apparatus according to any one of Claims 6 to 8, wherein the transmission means transmits the probe response frame including, as the capability information, a Very High Throughput (VHT) capabilities element indicating capability information for communication compliant with the IEEE 802.11 ac standard.

[Claim 10]

The communication apparatus according to any one of Claims 1 to 9, wherein the decision means decides to include, in the probe response frame, the capability information corresponding to a frequency band or a frequency channel of which selection is based on information indicating a frequency band or a frequency channel included in a multi-link element compliant with the IEEE 802.11 series standards included in the received probe request frame.

[Claim 11]

The communication apparatus according to any one of Claims 1 to 10, wherein the decision means decides to include, in the probe response frame, the capability information corresponding to a frequency band or a frequency channel of which selection is based on information indicating a frequency band or a frequency channel included in a multi-band element compliant with the IEEE 802.11 series standards included in the received probe request frame.

[Claim 12]

The communication apparatus according to any one of Claims 1 to 11, wherein the decision means decides to include, in the probe response frame, the capability information corresponding to a frequency band or a frequency channel of which selection is based on information indicating a frequency band or a frequency channel included in a Supported Operating element compliant with the IEEE 802.11 series standards included in the received probe request frame.

[Claim 13]

The communication apparatus according to any one of Claims 1 to 12, wherein, in a case where the reception means receives the probe request frame from the another communication apparatus via a plurality of frequency channels, the transmission means transmits the probe response frame via a first frequency channel among the plurality of frequency channels and does not transmit the probe response frame via a frequency channel(s) different from the first frequency channel among the plurality of frequency channels.

[Claim 14]

A control method for a communication apparatus, comprising:

~~a reception step of~~ receiving a probe request frame from another communication apparatus;

~~a decision step of~~ deciding, as capability information indicating a capability related to multi-link communication that is performed via a plurality of links established with a partner device, the capability information to be included in a probe response frame corresponding to a frequency band or a frequency channel of which selection is based on information about a frequency band or a frequency channel included in the probe request frame received from the another communication apparatus in the ~~reception step~~receiving; and

~~a transmission step of~~ transmitting the probe response frame including the capability information corresponding to the frequency band or the frequency channel decided in the ~~decision step~~deciding.

[Claim 15]

A program for causing a computer to function as each means of the communication apparatus according to any one of Claims 1 to 13.