CLAIMS

1. A method of configuring a mesh multi-link device, MLD, the MLD operating in a mesh network using multi-link operation, MLO, the mesh network including a plurality of mesh STAs and mesh MLDs, the MLD communicating over multiple WLAN radio links between one or more AP MLDs and one or more non-AP MLDs, wherein each MLD has one or more affiliated STAs, where each affiliated STA operates on a different link designated for mesh operation; the method comprising:

receiving multi-link operation mesh basic service set, MLO MBSS, information indicating MLO MBSS capability and / or operational parameters;

wherein a specific mesh multi-link element, MLE, is included in the MLO MBSS information and

advertising the mesh capability of the MLD using the specific MLE.

2. The method according to claim 1, wherein receiving multi-link operation mesh basic service set, MLO MBSS, information indicating MLO MBSS capability comprises:

receiving a beacon frame or unsolicited Probe Response frame; or

receiving a Probe Response frame as a response to a solicited Probe Request frame; or

receiving a multi-link Probe Response as a response to a solicited multi-link Probe Request.

3. The method according to claim 1 or 2, further comprising:

updating a reduced neighbor report, RNR, element and advertising the updated RNR element in a Beacon frame and Probe Response frame together with advertising the specific MLE; and

updating mesh operation on one or more STAs affiliated with the MLD allowing the MLD to advertise and discover various MBSSes on the links designated for mesh operation.

4. The method according to any one of the previous claims, further comprising:

discovering mesh MLO using a mesh multi-link probe request and response, wherein the discovering comprises: receiving information details of the peer mesh MLD prior to peering with another mesh MLD,

wherein the information details received from the mesh MLD include the specific MLE having mesh capability, the specific MLE including a field for link information, Link Info field,

corresponding to all other affiliated STAs operating in the Mesh BSS or about specific requested affiliated STAs operating in the Mesh BSS.

5. The method according to claim 4,

wherein in case all links of the MLD are mesh capable, the Common Info field of the updated MLE is used to include the Mesh Configuration Element and indicating that all links support the mesh operation, wherein mesh information included in the Mesh Configuration Element applies to all links; else

wherein in case only some of the links of the MLD are mesh capable, information common to all mesh capable links of the MLD is included in the Common Info field of the MLD, whereas link specific information is included in a subfield of the Link Info field of the MLE indicating STA profiles, Per-STA Profile sub element, wherein the link specific information is obtained by receiving a response to a mesh multi-link probe request from a peer MLD having mesh capability.

6. The method according to claim 5, wherein in case only some of the links of the MLD are mesh capable, a subfield of the Per-STA Profile sub element, indicating control of STAs, STA Control subfield, is updated to include a subfield indicating mesh parameters in a Mesh Capable STA Info field, and a subfield indicating mesh parameters in a Mesh Capable STA Profile field.

7. The method according to claim 6, wherein in case the value of the Mesh Capable Common subfield is equal to 0, the value of the Mesh Capable STA Info subfield is equal to 1, indicating that the link is mesh capable and all of the mesh configuration information specific to the link is included in the STA Info subfield of the updated MLE.

8. A mesh multi-link device, MLD, the MLD being configured to:

operate in a mesh network using multi-link operation, MLO, the mesh network including a plurality of mesh STAs and mesh MLDs,

communicate over multiple WLAN radio links between one or more AP MLDs and one or more non-AP MLDs, wherein each MLD has one or more affiliated STAs, where each affiliated STA is configured to operate on a different link designated for mesh operation;

receive multi-link operation mesh basic service set, MLO MBSS, information indicating MLO MBSS capability and / or operational parameters;

wherein a specific mesh multi-link element, MLE, is included in the MLO MBSS information, and

advertise the mesh capability of the MLD using the specific MLE.

9. The device to claim 8, wherein the MLD being configured to receive multi-link operation mesh basic service set, MLO MBSS, information indicating MLO MBSS capability further comprises the MLD being configured to:

receive a beacon frame or unsolicited Probe Response frame; or

receive a Probe Response frame as a response to a solicited Probe Request frame; or

receive a multi-link Probe Response as a response to a solicited multi-link Probe Request.

10. The device according to claim 8 or 9, further comprising the MLD being configured to:

update a reduced neighbor report, RNR, element and advertise the updated RNR element in a Beacon frame and Probe Response frame together with the specific MLE; and

update mesh operation on one or more STAs affiliated with the MLD allowing the MLD to advertise and discover various MBSSes on the links designated for mesh operation.

11. A mesh multi-link device, MLD, the MLD being configured to:

operate in a mesh network using multi-link operation, MLO, the mesh network including a plurality of mesh STAs and mesh MLDs,

communicate over multiple WLAN radio links between one or more AP MLDs and one or more non-AP MLDs, wherein each MLD has one or more affiliated STAs, where each affiliated STA is configured to operate on a different link designated for mesh operation;

transmit multi-link operation mesh basic service set, MLO MBSS, information indicating MLO MBSS capability and / or operational parameters;

wherein a specific mesh multi-link element, MLE, is included in the MLO MBSS information.

12. The device to claim 11, wherein the MLD being configured to transmit multi-link operation mesh basic service set, MLO MBSS, information indicating MLO MBSS capability further comprises the MLD being configured to:

transmit a beacon frame or unsolicited Probe Response frame; or

transmit a Probe Response frame as a response to a solicited Probe Request frame; or

transmit a multi-link Probe Response as a response to a solicited multi-link Probe Request.

13. The device according to claim 11 or 12, further comprising the MLD being configured to:

update a reduced neighbor report, RNR, element and advertise the updated RNR element in a Beacon frame and Probe Response frame together with the specific MLE; and

update mesh operation on one or more STAs affiliated with the MLD allowing the MLD to advertise and discover various MBSSes on the links designated for mesh operation.

14. A computer program product comprising program code for performing the method according to any one of the preceding claims 1 to 7 when executed on a computer or a processor.

15. A non-transitory computer-readable medium carrying a program code which, when executed by a computer device, causes the computer device to perform the method of any one of claims 1 to 7.