CLAIMS

1. A method for triggering uplink transmission in a wireless local area network (WLAN), the method comprising:

generating, by an access point (AP), a trigger frame based on a type of physical layer protocol data unit (PPDU) transmissions to be solicited from a plurality of stations (STAs) in the WLAN, ~~wherein~~ a common information field of the trigger frame indicating whether or not a special user information field is present in the trigger frame~~comprises a first subfield indicating whether the trigger frame is a first type trigger frame or a second type trigger frame, and if the trigger frame is the second type trigger frame, the common information field further comprises a second subfield indicating the type of the PPDU transmissions~~, and

transmitting, by the AP, the generated trigger frame to the plurality of STAs.

2. The method according to claim 1, wherein the common information field of the trigger frame comprises a first subfield indicating whether the trigger frame is a first type trigger frame or a second type trigger frame, if the trigger frame is the second type trigger frame, the common information field further comprises a second subfield indicating the type of the PPDU transmissions.

3. The method according to claim 1 or 2, wherein the special user information field is located immediately after the common information field.

4. The method according to any one of claims 1-3, wherein the special user information field carries necessary universal SIGNAL (U-SIG) subfields of the solicited PPDUs.

5. The method according to any one of claims 1-4, wherein the solicited PPDU transmissions are extremely high throughput trigger-based PPDUs (EHT TB PPDUs).

6. The method according to any one of claims 1-5, wherein a second subfield of the common information field is an aggregated PPDU (A-PPDU) Flag subfield indicating whether a trigger-

based frequency domain aggregated PPDU (TB FD-A-PPDU) transmission or an EHT TB PPDU transmission is solicited.

7. The method according to claim 6, wherein the A-PPDU Flag subfield is set to 0 to indicate the EHT TB PPDU transmission is solicited, and set to 1 to indicate the TB FD-A-PPDU transmission is solicited; and

if a bandwidth (BW) of the TB FD-A-PPDU is set to 320 MHz, a BW allocated for a high efficiency (HE) TB PPDU transmission is a primary 80 MHz channel (P80) or a primary 160 MHz channel (P160), while a BW allocated for an extremely high throughput (EHT) PPDU transmission from release 2 (R2) EHT STAs is a secondary 160 MHz channel (S160).

8. The method according to claim 6, wherein the A-PPDU Flag subfield comprises Boolean values to indicate an EHT TB PPDU transmission is solicited or TB FD-A-PPDU transmission is solicited.

9. The method according to claim 2, wherein the first subfield further indicates the trigger frame is an enhanced trigger frame or the special user information field is not present in the trigger frame.

~~2. The method according to claim 1, wherein the generating the trigger frame based on the type of PPDU transmissions comprises:~~

~~setting, by the AP, the first subfield of the common information field to indicate that the generated trigger frame is the first type trigger frame if a first type PPDU transmission is to be solicited, wherein the first type PPDU transmission comprises a plurality of high efficiency (HE) trigger-based (TB) PPDUs transmitted from a plurality of HE STAs, release 1 (R1) extremely high throughput (EHT) STAs and/or release 2 (R2) EHT STAs.~~

~~3. The method according to claim 2, wherein the generating the trigger frame based on the type of PPDU transmissions further comprises:~~

~~setting, by the AP, an uplink (UL) bandwidth (BW) subfield of the common information field to indicate a BW allocated for the first type PPDU transmission.~~

4. The method according to claim 1, wherein the generating the trigger frame based on the type of PPDU transmissions comprises:

setting, by the AP, the first subfield of the common information field to indicate that the type of the trigger frame is the second type trigger frame, and

setting, by the AP, the second subfield of the common information field to indicate that the type of PPDU transmissions is a second type PPDU transmission if the second type PPDU transmission is to be solicited, wherein the second type PPDU transmission comprises a plurality of EHT TB PPDUs transmitted from a plurality of R1 EHT STAs and/or R2 EHT STAs.

5. The method according to claim 4, wherein the generating the trigger frame based on the type of PPDU transmissions further comprises:

setting, by the AP, at least one subfield for resource unit (RU) allocation of an EHT format user information field of the trigger frame to indicate a RU or a multiple resource unit (MRU) at which an EHT TB PPDU to be transmitted by a STA indicated by an AID12 subfield of the EHT format user information field; and

setting, by the AP, a subfield of a special user information field to indicate a BW allocated for the second type PPDU transmission.

6. The method according to claim 1, wherein the generating the trigger frame based on the type of PPDU transmissions comprises:

setting, by the AP, the first subfield of the common information field to indicate that the type of the trigger frame is the second type trigger frame, and

setting, by the AP, the second subfield of the common information field to indicate that the type of PPDU transmissions is a third type PPDU transmission if a third type PPDU transmission is to be solicited, wherein the third type PPDU transmission comprises a TB frequency domain aggregated PPDU (FD-A-PPDU) transmission from at least one HE STA and at least one R2 EHT STA, wherein the TB FD-A-PPDU transmission comprises a HE TB PPDU transmission and an EHT TB PPDU transmission.

7. The method according to claim 6, wherein the generating the trigger frame based on the type of

PPDU transmissions further comprises:

setting, by the AP, a UL BW subfield of the common information field to indicate a BW allocated for the HE TB PPDU transmission,

setting, by the AP, at least one subfield for RU allocation of a user information field of the trigger frame to indicate a RU or a MRU at which a TB PPDU to be transmitted by a STA indicated by an AID12 subfield of the user information field, and

setting, by the AP, a subfield of a special user information field of the trigger frame to indicate a BW allocated for the EHT TB PPDU transmission.

8. The method according to claim 7, further comprising:

if the UL BW subfield of the common information field is set to indicate 80 MHz BW and the subfield of the special user information field is set to indicate 160 MHz BW, allocating a primary 80 MHz channel for the HE TB PPDU transmission, and allocating a secondary 160 MHz channel for the EHT TB PPDU transmission;

if the UL BW subfield of the common information field is set to indicate 160 MHz BW and the subfield of the special user information field is set to indicate 80 MHz BW, allocating a primary 160 MHz channel for the HE TB PPDU transmission, and allocating an unpunctured 80 MHz frequency segment of a secondary 160 MHz channel for the EHT TB PPDU transmission; or

if the UL BW subfield of the common information field is set to indicate 160 MHz BW and the subfield of the special user information field is set to indicate 160 MHz BW, allocating a primary 160 MHz channel for the HE TB PPDU transmission, and allocating a secondary 160 MHz channel for the EHT TB PPDU transmission.

9. The method according to any one of claim 2 to claim 8, wherein the generating the trigger frame based on the type of PPDU transmissions further comprises:

setting, by the AP, a third subfield of the common information field to indicate a count number of HE Long Training field (HE-LTF) symbols in each HE TB PPDU to be solicited or a count number of EHT Long Training field (EHT-LTF) symbols in each EHT TB PPDU to be solicited.

~~10. The method according to any one of claim 2 to claim 8, wherein the generating the trigger frame based on the type of PPDU transmissions further comprises:~~

~~setting, by the AP, a third subfield of the common information field to indicate a count number of HE-LTF symbols in each HE TB PPDU to be solicited; and~~

~~setting, by the AP, a fourth subfield of the common information field to indicate a count number of EHT-LTF symbols in each EHT TB PPDU to be solicited.~~

~~11~~10. An access point (AP) for triggering uplink transmission in a wireless local area network (WLAN), the AP comprising: a memory configured to store instructions for triggering uplink transmission in the WLAN, and a processor communicably coupled with the memory, the processor configured to execute the instructions to:

generate a trigger frame based on a type of physical layer protocol data unit (PPDU) transmissions to be solicited from a plurality of stations (STAs) in the WLAN, ~~wherein~~ a common information field of the trigger frame indicating whether or not a special user information field is present in the trigger frame~~comprises a first subfield indicating whether the trigger frame is a first type trigger frame or a second type trigger frame, and if the trigger frame is the second type trigger frame, the common information field further comprises a second subfield indicating the type of the PPDU transmissions~~, and

transmit the generated trigger frame to the plurality of STAs.

11. The AP according to claim 10, wherein the common information field of the trigger frame comprises a first subfield indicating whether the trigger frame is a first type trigger frame or a second type trigger frame, if the trigger frame is the second type trigger frame, the common information field further comprises a second subfield indicating the type of the PPDU transmissions.

12. The AP according to claim 10 or 11, wherein the special user information field is located immediately after the common information field.

13. The AP according to any one of claims 10-12, wherein the special user information field carries necessary universal SIGNAL (U-SIG) subfields of the solicited PPDUs.

14. The AP according to any one of claims 10-13, wherein the solicited PPDU transmissions are extremely high throughput trigger-based PPDUs (EHT TB PPDUs).

15. The AP according to any one of claims 10-14, wherein a second subfield of the common information field is an aggregated PPDU (A-PPDU) Flag subfield indicating whether a trigger-based frequency domain aggregated PPDU (TB FD-A-PPDU) transmission or an EHT TB PPDU transmission is solicited.

16. The AP according to claim 15, wherein the A-PPDU Flag subfield is set to 0 to indicate the EHT TB PPDU transmission is solicited, and set to 1 to indicate the TB FD-A-PPDU transmission is solicited; and

if a bandwidth (BW) of the TB FD-A-PPDU is set to 320 MHz, a BW allocated for a high efficiency (HE) TB PPDU transmission is a primary 80 MHz channel (P80) or a primary 160 MHz channel (P160), while a BW allocated for an extremely high throughput (EHT) PPDU transmission from release 2 (R2) EHT STAs is a secondary 160 MHz channel (S160).

17. The AP according to claim 15, wherein the A-PPDU Flag subfield comprises Boolean values to indicate an EHT TB PPDU transmission is solicited or TB FD-A-PPDU transmission is solicited.

18. The AP according to claim 11, wherein the first subfield further indicates the trigger frame is an enhanced trigger frame or the special user information field is not present in the trigger frame.

~~12. The AP according to claim 11, wherein the processor is further configured to execute the instructions to:~~

~~set the first subfield of the common information field to indicate that the generated~~

~~trigger frame is the first type trigger frame if a first type PPDU transmission is to be solicited, wherein the first type PPDU transmission comprises a plurality of high efficiency (HE) trigger-based (TB) PPDUs transmitted from a plurality of HE STAs, release 1 (R1) extremely high throughput (EHT) STAs and/or release 2 (R2) EHT STAs.~~

13. The AP according to claim 12, wherein the processor is further configured to execute the instructions to:

set a UL BW subfield of the common information field to indicate a BW allocated for the first type PPDU transmission.

14. The AP according to claim 11, wherein the processor is further configured to execute the instructions to:

set the first subfield of the common information field to indicate that the type of the trigger frame is the second type trigger frame, and

set the second subfield of the common information field to indicate that the type of PPDU transmissions is a second type PPDU transmission if the second type PPDU transmission is to be solicited, wherein the second type PPDU transmission comprises a plurality of EHT TB PPDUs transmitted from a plurality of R1 EHT STAs and/or R2 EHT STAs.

15. The AP according to claim 14, wherein the processor is further configured to execute the instructions to:

set at least one subfield for resource unit (RU) allocation of an EHT format user information field of the trigger frame to indicate a RU or a multiple resource unit (MRU) at which an EHT TB PPDU to be transmitted by a STA indicated by an AID12 subfield of the EHT format user information field; and

set a subfield of a special user information field to indicate a BW allocated for the second type PPDU transmission.

16. The AP according to claim 11, wherein the processor is further configured to execute the instructions to:

set the first subfield of the common information field to indicate that the type of the trigger frame is the second type trigger frame, and

set the second subfield of the common information field to indicate that the type of PPDU transmissions is a third type PPDU transmission if the third type PPDU transmission is to be solicited, wherein the third type PPDU transmission comprises a TB frequency domain

aggregated PPDU (FD-A-PPDU) transmission from at least one HE STA and at least one R2 EHT STA, wherein the TB FD-A-PPDU transmission comprises a HE TB PPDU transmission and a EHT TB PPDU transmission.

17. The AP according to claim 16, wherein the processor is further configured to execute the instructions to:

set a UL BW subfield of the common information field to indicate a BW allocated for the HE TB PPDU transmission, and

set at least one subfield for RU allocation of a user information field of the trigger frame to indicate a RU or a MRU at which a TB PPDU to be transmitted by a STA indicated by an AID12 subfield of the user information field; and

set a subfield of a special user information field of the trigger frame to indicate a BW allocated for the EHT TB PPDU transmission.

18. The AP according to claim 17, wherein the processor is further configured to execute the instructions to:

if the UL BW subfield of the common information field is set to indicate 80 MHz BW and the subfield of the special user information field is set to indicate 160 MHz BW, allocate a primary 80 MHz channel for the HE TB PPDU transmission, and allocate a secondary 160 MHz channel for the EHT TB PPDU transmission;

if the UL BW subfield of the common information field is set to indicate 160 MHz BW and the subfield of the special user information field is set to indicate 80 MHz BW, allocate a primary 160 MHz channel for the HE TB PPDU transmission is, and allocate an unpunctured 80 MHz frequency segment of a secondary 160 MHz channel for the EHT TB PPDU transmission; or

if the UL BW subfield of the common information field is set to indicate 160 MHz BW and the subfield of the special user information field is set to indicate 160 MHz BW, allocate a primary 160 MHz channel for the HE TB PPDU transmission, and allocate a secondary 160 MHz channel for the EHT TB PPDU transmission.

19. The AP according to any one of claim 12 to claim 18, wherein the processor is further

~~configured to execute the instructions to set a third subfield of the common information field to indicate a count number of HE-LTF symbols in each HE TB PPDU to be solicited or a count number of EHT-LTF symbols in each EHT TB PPDU to be solicited.~~

~~20. The AP according to any one of claim 12 to claim 18, wherein the processor is further configured to execute the instructions to set a third subfield of the common information field to indicate a count number of HE-LTF symbols in each HE TB PPDU to be solicited; and set a fourth subfield of the common information field to indicate a count number of EHT-LTF symbols in each EHT TB PPDU to be solicited.~~

~~21~~19. A method for triggering uplink transmission in a wireless local area network (WLAN), the method comprising:

receiving, by a station (STA), a trigger frame from an access point (AP), wherein the trigger frame is generated based on a type of physical layer protocol data unit (PPDU) transmissions to be solicited from a plurality of STAs, ~~wherein~~ a common information field of the trigger frame indicating whether or not a special user information field is present in the trigger frame~~comprises a first subfield indicating whether the trigger frame is a first type trigger frame or a second type trigger frame, and if the trigger frame is the second type trigger frame, the common information field further comprises a second subfield indicating the type of the PPDU transmissions~~, and

determining, by the STA, the type of the solicited PPDU transmissions by decoding the common information field of the received trigger frame.

~~22. The method according to claim 21, wherein the determining the type of the solicited PPDU transmissions comprises:~~

~~decoding, by the STA, the first subfield of the common information field; and~~

~~determining, by the STA, that the type of the solicited PPDU transmissions is a first type PPDU transmission if the first subfield is set to indicate that the trigger frame is the first type trigger frame, wherein the first type PPDU transmission comprises a plurality of high efficiency (HE) trigger based (TB) PPDUs transmitted from a plurality of HE STAs, release 1 (R1) extremely high throughput (EHT) STAs and/or release 2 (R2) EHT STAs.~~

23. The method according to claim 22, further comprising: decoding, by the STA, an uplink (UL) bandwidth (BW) subfield of the common information field to determine a BW allocated for the first type PPDU transmission.

24. The method according to claim 21, wherein the determining the type of the solicited PPDU transmissions comprises:

decoding, by the STA, the first subfield of the common information field; and

if the first subfield is set to indicate that the trigger frame is the second type trigger frame, decoding, by the STA, the second subfield of the common information field; and

determining, by the STA, that the type of the solicited PPDU transmissions is a second type PPDU transmission if the second subfield is set to indicate that the type of PPDU transmissions is the second type PPDU transmission, wherein the second type PPDU transmission comprises a plurality of EHT TB PPDUs transmitted from a plurality of R1 EHT STAs and/or R2 EHT STAs.

25. The method according to claim 24, further comprising:

identifying, by the STA, an EHT format user information field of the received trigger frame, which has an AID12 subfield matched with an AID of the STA;

decoding, by the STA, at least one subfield for resource unit (RU) allocation of the identified EHT format user information field to determine a RU or a multiple resource unit (MRU) at which an EHT TB PPDU to be transmitted by the STA; and

decoding, by the STA, a subfield of a special user information field of the received trigger frame to determine a BW allocated for the second type PPDU transmission.

26. The method according to claim 21, wherein the determining the type of the solicited PPDU transmissions comprises:

decoding, by the STA, the first subfield of the common information field; and

if the first subfield is set to indicate that the received trigger frame is the second type trigger frame, decoding, by the STA, the second subfield of the common information field; and

determining, by the STA, that the type of the solicited PPDU transmissions is a third type

PPDU transmission if the second subfield is set to indicate that the type of PPDU transmissions is the third type PPDU transmission, wherein the third type PPDU transmission comprises a TB frequency domain aggregated PPDU (FD-A-PPDU) transmission from at least one HE STA and at least one R2 EHT STA, wherein the TB FD-A-PPDU transmission comprises a HE TB PPDU transmission and an EHT TB PPDU transmission.

27. The method according to claim 26, further comprising:

decoding, by the STA, a UL BW subfield of the common information field to determine a BW allocated for the HE TB PPDU transmission;

identifying, by the STA, a user information field of the received trigger frame, which has an AID12 subfield matched with an AID of the STA;

decoding, by the STA, at least one subfield for RU allocation of the identified user information field to determine a RUor a MRU allocated for a TB PPDU transmission from the STA;

decoding, by the STA, a subfield of a special user information field of the received trigger frame to determine a BW allocated for the EHT TB PPDU transmission; and

determining, by the STA, that a HE TB PPDU is to be transmitted if the allocated RU or MRU is located within the BW allocated for the HE TB PPDU transmission; or an EHT TB PPDU is to be transmitted if the allocated RU or MRU is located within the BW allocated for the EHT TB transmission.

28. The method according to claim 27, further comprising:

if the UL BW subfield of the common information field is set to indicate 80 MHz BW and the subfield of the special user information field is set to indicate 160 MHz BW, transmitting, by the STA, a HE TB PPDU in a primary 80 MHz channel, or an EHT TB PPDU in a secondary 160 MHz channel;

if the UL BW subfield of the common information field is set to indicate 160 MHz BW and the subfield of the special user information field is set to indicate 80 MHz BW, transmitting, by the STA, a HE TB PPDU in a primary 160 MHz channel, or an EHT TB PPDU in an unpunctured 80 MHz frequency segment of a secondary 160 MHz channel; or

if the UL BW subfield of the common information field is set to indicate 160 MHz BW

~~and the subfield of the special user information field is set to indicate 160 MHz BW, transmitting, by the STA, a HE TB PPDU in a primary 160 MHz channel, or an EHT TB PPDU in a secondary 160 MHz channel.~~

~~29. The method according to any one of claim 22 to claim 28, further comprising:~~

~~decoding, by the STA, a third subfield of the common information field to determine a count number of HE-LTF symbols in a solicited HE TB PPDU or a count number of EHT-LTF symbols in a solicited EHT TB PPDU.~~

~~30. The method according to any one of claim 22 to claim 28, further comprising:~~

~~decoding, by the STA, a third subfield of the common information field to determine a count number of HE-LTF symbols in a solicited HE TB PPDU; or~~

~~decoding, by the STA, a fourth subfield of the common information field to determine a count number of EHT-LTF symbols in a solicited EHT TB PPDU.~~

~~31~~20. A station (STA) for triggering uplink transmission in a WILAN, the STA comprising a memory to store instructions for triggering uplink transmission in the WLAN, and a processor communicably coupled with the memory, the processor configured to execute the instructions to:

receive a trigger frame from an access point (AP), wherein the trigger frame is generated based on a type of physical layer protocol data unit (PPDU) transmissions to be solicited from a plurality of STAs, ~~wherein~~ a common information field of the trigger frame indicating whether or not a special user information field is present in the trigger frame~~comprises a first subfield indicating whether the trigger frame is a first type trigger frame or a second type trigger frame, and if the trigger frame is the second type trigger frame, the common information field further comprises a second subfield indicating the type of the PPDU transmissions~~, and

determine the type of the solicited PPDU transmissions by decoding the common information field of the received trigger frame.

~~32. The STA according to claim 31, wherein the processor is further configured to execute the instructions to:~~

~~decode the first subfield of the common information field; and~~

determine that the type of the solicited PPDU transmissions is a first type PPDU transmission if the first subfield is set to indicate that the trigger frame is the first type trigger frame, wherein the first type PPDU transmission comprises a plurality of high efficiency (HE) trigger-based (TB) PPDUs transmitted from a plurality of HE STAs, release 1 (R1) extremely high throughput (EHT) STAs and/or release 2 (R2) EHT STAs.

33. The STA according to claim 32, wherein the processor is further configured to execute the instructions to decode a UL bandwidth (BW) subfield of the common information field to determine a BW allocated for the first type PPDU transmission.

34. The STA according to claim 31, wherein the processor is further configured to execute the instructions to:

decode the first subfield of the common information field; and

if the first subfield is set to indicate that the trigger frame is the second type trigger frame, decode the second subfield of the common information field; and

determine that the type of the solicited PPDU transmissions is a second type PPDU transmission if the second subfield is set to indicate that the type of PPDU transmissions is the second type PPDU transmission, wherein the second type PPDU transmission comprises a plurality of EHT TB PPDUs transmitted from a plurality of R1 EHT STAs and/or R2 EHT STAs.

35. The STA according to claim 34, wherein the processor is further configured to execute the instructions to:

identify an EHT format user information field of the received trigger frame, which has an AID12 subfield matched with an AID of the STA;

decode at least one subfield for resource unit (RU) allocation of the identified EHT format user information field to determine a RU or a multiple resource unit (MRU) at which an EHT TB PPDU to be transmitted by the STA; and

decode a subfield of a special user information field of the received trigger frame to determine a BW allocated for the second type PPDU transmission.

36. The STA according to claim 31, wherein the processor is further configured to execute the

instructions to:

decode the first subfield of the common information field; and

if the first subfield is set to indicate that the received trigger frame is the second type trigger frame, decode the second subfield of the common information field; and

determine that the type of the solicited PPDU transmissions is a third type PPDU transmission if the second subfield is set to indicate that the type of PPDU transmissions is the third type PPDU transmission, wherein the third type PPDU transmission comprises a TB frequency domain aggregated PPDU (FD-A-PPDU) transmission from at least one HE STA and at least one R2 EHT STA, wherein the TB FD-A-PPDU transmission comprises a HE TB PPDU transmission and a EHT TB PPDU transmission.

37. The STA according to claim 36, wherein the processor is further configured to execute the instructions to:

decode a UL BW subfield of the common information field to determine a BW allocated for the HE TB PPDU transmission;

identify a user information field of the received trigger frame, which has an AID12 subfield matched with an AID of the STA;

decode at least one subfield for RU allocation of the identified user information field to determine RU or a MRU allocated for a TB PPDU transmission from the STA;

decode a subfield of a special user information field of the received trigger frame to determine a BW allocated for the EHT TB PPDU transmission; and

determine that a HE TB PPDU is to be transmitted if the allocated RU or MRU is located within the BW allocated for the HE TB PPDU transmission; or an EHT TB PPDU is to be transmitted if the allocated RU or MRU is located within the BW allocated for the EHT TB transmission.

38. The SAT according to claim 37, the processor is further configured to execute the instructions to:

if the UL BW subfield of the common information field is set to indicate 80 MHz BW and the subfield of the special user information field is set to indicate 160 MHz BW, transmit a HE TB PPDU in a primary 80 MHz channel, or an EHT TB PPDU in a secondary 160 MHz

channel;

if the UL BW subfield of the common information field is set to indicate 160 MHz BW and the subfield of the special user information field is set to indicate 80 MHz BW, transmit a HE TB PPDU in a primary 160 MHz channel, or an EHT TB PPDU in an unpunctured 80 MHz frequency segment of a secondary 160 MHz channel; or

if the UL BW subfield of the common information field is set to indicate 160 MHz BW and the subfield of the special user information field is set to indicate 160 MHz BW, transmit a HE TB PPDU in a primary 160 MHz channel, or an EHT TB PPDU in a secondary 160 MHz channel.

39. The SAT according to any one of claim 32 to claim 38, the processor is further configured to execute the instructions to:

decode a third subfield of the common information field to determine a count number of HE-LTF symbols in a solicited HE TB PPDU or a count number of EHT-LTF symbols in a solicited EHT TB PPDU.

40. The SAT according to any one of claim 32 to claim 38, the processor is further configured to execute the instructions to:

decode a third subfield of the common information field to determine a count number of HE-LTF symbols in a solicited HE TB PPDU; or

decode a fourth subfield of the common information field to determine a count number of EHT-LTF symbols in a solicited EHT TB PPDU.

41. A computer program product comprising instructions to cause a computer to perform a method according to any one of claim 1 to claim 10, or any one of claim 21 to claim 30, when executed thereon.