WHAT IS CLAIMED IS:

1. A method for communications device operations, the method comprising:

determining a hybrid automatic repeat request (HARQ) response for each CC in a set of configured CCs, thereby producing a set of HARQ responses;

generating an information vector from the set of HARQ responses, wherein a sub-vector composed of one or more bits selected from the information vector is assigned a fixed vector value independent of HARQ responses for CCs not in a set of CCs when the set of CCs is not empty, where the set of CCs comprises at least one CC whose HARQ response is equal to DTX;

encoding the information vector; and

transmitting the encoded information vector.

2. The method of claim 1, wherein generating an information vector comprises applying a mapping rule based on the set of configured CCs to the set of HARQ responses.

3. The method of claim 1, wherein the sub-vector with the fixed vector value corresponds to CCs in the set of CCs.

4. The method of claim 3, wherein remaining bits in the information vector are set to values based on HARQ responses associated with CCs not in the set of CCs.

5. The method of claim 1, wherein generating the information vector is by mapping a set {ACK, NACK} to a set {(ACK, ACK), (ACK, NACK), (NACK, ACK), (NACK, NACK)} in case of a single transport block transmission for a CC.

6. The method of claim 1, wherein encoding the information vector comprises encoding the information vector with a linear block code.

7. The method of claim 6, wherein the linear block code comprises a Reed-Muller code, a modified Reed-Muller code, a punctured Reed-Muller code, or a combination thereof.

8. The method of claim 1, further comprising detecting an existence of a transmission over each CC in the set of configured CCs.

9. The method of claim 8, wherein a HARQ response for a CC is set to a DTX value if a transmission is not detected over the CC.

10. The method of claim 8, wherein detecting an existence comprises detecting a control channel.

11. A method for communications device operations, the method comprising:

decoding a received encoded information vector, the encoded information vector comprises a hybrid automatic repeat request (HARQ) response for each component carrier (CC) in a set of configured CCs, wherein the decoding makes use of *a priori* information about a subset of CCs from a set of configured CCs used to transmit information from the communications device, thereby producing an information vector; and

generating individual HARQ responses from the information vector.

12. The method of claim 11, wherein the *a priori* information indicates that one or more HARQ responses for the set of configured CCs takes a DTX value.

13. The method of claim 12, wherein the set of configured CCs is configured by radio source control configuration or media access control activation.

14. The method of claim 12, wherein the *a priori* information further comprises information that no data transmission was scheduled over the subset of CCs in the previous transmission.

15. The method of claim 11, wherein decoding a received encoded information vector comprises applying a linear block code to the received encoded information vector.

16. The method of claim 15, wherein the decoding operates in a subspace of the linear block code wherein the subspace is determined based on the subset of CCs.

17. The method of claim 11, wherein a set of bits in the information vector takes a known vector value.

18. The method of claim 17, wherein the *a priori* information determines the set of bits.

19. A method for transmitting multiple hybrid automatic repeat request (HARQ) responses, the method comprising:

determining a first set of component carrier (CC), wherein the first set of CC comprises CC for which a HARQ response is DTX;

determining a second set of CC, which does not contain any CC in the first set of CC;

assigning a set of bits of an information vector to a fixed vector value, wherein the fixed vector value is based on the first set of CC;

assigning remaining bits in the information vector to values based on the second set of CC;

encoding the information vector; and

transmitting the encoded information vector.

20. The method of claim 19, wherein the set of bits of the information vector is used to represent HARQ responses for CCs in the first set of CC.

21. The method of claim 19, wherein the first set of CC and the second set of CC belong to a set of configured CC.

22. The method of claim 19, wherein the set of bits is based on a HARQ response in a CC.

23. The method of claim 22, wherein a HARQ response is defined for one or more transport blocks transmitted over a CC.

24. A communications device comprising:

a response unit configured to determine a hybrid automatic repeat request (HARQ) response for each transport block (TB) of each component carrier (CC) in a set of configured CCs assigned to the communications device;

a mapper coupled to the response unit, the mapper configured to generate an information vector from HARQ responses produced by the response unit and the set of configured CCs, wherein a sub-vector composed of one or more bits selected from the information vector is assigned a fixed vector value regardless of HARQ responses for CCs not in a set of CCs when the set of CCs is not empty, where the set of CCs is a set of CCs whose HARQ response is equal to DTX; and

an encoder coupled to the mapper, the encoder configured to encode the information vector.

25. The communications device of claim 24, wherein the mapper is configured to apply a mapping rule to the HARQ responses produced by the response unit.

26. The communications device of claim 24, wherein the encoder is configured to encode the information vector using a linear block code.

27. A communications device comprising:

a decoder configured to be coupled to an information source and to decode an encoded information vector provided by the information source, wherein the decoder makes use of *a priori* information about a subset of component carriers (CC) from a set of configured CCs used

to transmit information;

a generator coupled to the decoder, the generator configured to produce individual hybrid automatic repeat requested (HARQ) responses from an output of the decoder; and

a processor coupled to the generator, the processor configured to process each of the individual HARQ responses.

28. The communications device of claim 27, wherein the *a priori* information indicates that one or more HARQ responses for the set of configured CCs takes a DTX value.

29. The communications device of claim 27, wherein the decoder is configured to decode the encoded information vector with a linear block code.

What is claimed is:

1. A method for communications device operations, the method comprising: determining a hybrid automatic repeat request (HARQ) response for each component carrier (CC) in a set of CCs configured by higher layer signaling, thereby producing a set of HARQ responses; generating an information vector from the set of HARQ responses, wherein the information vector comprises one or more bits respectively corresponding to a CC in the set of CCs, and a bit of the one or more bits is assigned a fixed value if HARQ response of a corresponding CC is set to DTX in response to no transmission detected over the CC; encoding the information vector; and transmitting the encoded information vector.

2. The method of claim 1, wherein generating an information vector comprises applying a mapping rule based on the set CCs to the set of HARQ responses.

3. The method of claim 1, wherein generating the information vector is by mapping a set {ACK, NACK} to a set {(ACK, ACK), (ACK, NACK), (NACK, ACK), (NACK, NACK)} in case of a single transport block transmission for a CC.

4. The method of claim 1, wherein encoding the information vector comprises encoding the information vector with a linear block code.

5. The method of claim 4, wherein the linear block code comprises a Reed-Muller code, a modified Reed-Muller code, a punctured Reed-Muller code, or a combination thereof.

6. The method of claim 1, further comprising detecting an existence of a transmission over each CC in the set of CCs.

7. The method of claim 6, wherein detecting an existence comprises detecting a control channel.

8. A method for communications device operations, the method comprising: receiving an encoded information vector comprising a hybrid automatic repeat request (HARQ) response for each component carrier (CC) in a set of CCs configured by higher layer signaling; decoding the received encoded information vector to produce an information vector, wherein

the information vector comprises one or more bits respectively corresponding to a CC in the set of CCs, and a bit of the one or more bits having a fixed value if HARQ response of a corresponding CC is set to DTX in response to no transmission detected over the CC; and generating individual HARQ responses from the information vector.

9. The method of claim 8, wherein the decoding further comprises makes use of a priori information indicating that HARQ response of the CC takes a DTX value.

10. The method of claim 9, wherein the a priori information further comprises information that no data transmission was scheduled over the CC the previous transmission.

11. The method of claim 8, wherein decoding a received encoded information vector comprises applying a linear block code to the received encoded information vector.

12. A communications device comprising: a response unit configured to determine a hybrid automatic repeat request (HARQ) response for each component carrier (CC) in a set of configured CCs; a mapper coupled to the response unit, the mapper configured to generate an information vector from HARQ responses produced by the response unit, wherein the information vector comprises one or more bits respectively corresponding to a CC in the set of CCs, and a bit of the one or more bits is assigned a fixed value if HARQ response of a corresponding CC is set to DTX in response to no transmission detected over the CC; and an encoder coupled to the mapper, the encoder configured to encode the information vector.

13. The communications device of claim 12, wherein the mapper is configured to apply a mapping rule to the HARQ responses produced by the response unit.

14. The communications device of claim 12, wherein the encoder is configured to encode the information vector using a linear block code.

15. A communications device comprising: a receiver configured to receive an encoded information vector, the encoded information vector comprises a hybrid automatic repeat request (HARQ) response for each component carrier (CC) in a set of CCs configured by higher layer signaling; a decoder configured to decode the received encoded information vector to produce an information vector, wherein the information vector comprises one or

more bits respectively corresponding to a CC in the set of CCs, and a bit of the one or more bits having a fixed value if HARQ response of a corresponding CC is set to DTX in response to no transmission detected over the CC; a generator coupled to the decoder, the generator configured to produce individual hybrid automatic repeat requested (HARQ) responses from an output of the decoder; and a processor coupled to the generator, the processor configured to process each of the individual HARQ responses.

16. The communications device of claim 15, wherein the decoder further configured to make use of a priori information indicating that one or more HARQ responses for the set of configured CCs takes a DTX value.

17. The communications device of claim 15, wherein the decoder is configured to decode the encoded information vector with a linear block code.