~~WHAT IS CLAIMED IS:~~

CLAIMS

~~1.~~ 1. A method of wireless communication performed by a transmitter device, comprising:

constructing, for adjusted fractally enhanced kernel (FRANK) polar coding, encoding code for encoding data of an ultra-reliable low latency (URLLC) communication,

wherein the adjusted FRANK polar coding removes a restriction on maximum blocklength of the encoding code, an encoding code rate, and a rate matching pattern that occurs with FRANK polar coding, wherein the adjusted FRANK polar coding enables the transmitter device to flexibly extend an existing polar sequence to an arbitrary blocklength polar code, wherein an information bit assignment to an information bit set associated with the encoding code is performed based at least in part on an adjusted dimensionality factor,

wherein the transmitter device is configured to remove one or more information bits from the information bit set based at least in part on at least one of a code rate or a code block length, wherein the encoding code is all-stage FRANK polar code or partial-stage FRANK polar code, and

wherein the encoding code is constructed for code block shortening or code block puncturing; and

transmitting the URLLC communication encoded using the encoding code based at least in part on the information bit assignment to the information bit set.

~~2.~~ 2. The method of claim 1, wherein the transmitter device is further configured to add ~~a~~ first one or more information bits to the information bit set ~~and remove a~~, wherein the one or more information bits are second one or more information bits ~~from the information bit set~~, and

wherein a first quantity of the first one or more information bits and a second quantity of the second one or more information bits is a common quantity.

~~3.~~ 3. The method of claim 1, wherein the transmitter device is further configured to add one or more information bits ~~or remove one or more information bits from~~to the information bit set based at least in part on at least one of ~~a~~the code rate, ~~a~~the code block length, a shortening configuration, a puncturing configuration, a reliability parameter, a bit location parameter, or an error propagation parameter.

~~4.~~ 4. The method of claim 1, wherein the transmitter device is configured to determine a quantity of information bits for one or more sub-sequences of the information bit set based at

least in part on a corresponding sub-sequence length and a mutual information allocation parameter.

~~5.~~ 5. The method of claim 1, wherein the transmitter device is configured to select the information bit set based at least in part on a length parameter and a reliability order parameter.

~~6.~~ 6. The method of claim 1, wherein the encoding code is constructed for all-stage FRANK polar coding and for code block puncturing.

~~7.~~ 7. The method of claim 1, wherein the encoding code is constructed for all-stage FRANK polar coding and for code block shortening.

~~8.~~ 8. The method of claim 1, wherein the encoding code is constructed for partial-stage FRANK polar coding and for code block puncturing.

~~9.~~ 9. The method of claim 1, wherein the encoding code is constructed for partial-stage FRANK polar coding and for code block shortening.

~~10.~~ 10. The method of claim 1, wherein the adjusted dimensionality factor is determined based at least in part on a quantity of punctured bits for code block puncturing.

~~11.~~ 11. The method of claim 1, wherein the adjusted dimensionality factor is determined based at least in **1**, the part on a quantity of shortened bits for code block shortening.

~~12.~~ 12. The method of claim 1, wherein the adjusted dimensionality factor is determined based at least in part on a block length.

~~13.~~ 13. The method of claim 1, wherein the adjusted dimensionality factor is determined based at least in part on a preconfigured value.

~~14.~~ 14. The method of claim 1, wherein a plurality of adjusted dimensionality factors, including the adjusted dimensionality factor, correspond to a plurality of sub-sequences of a sequence associated with the information bit set and the encoding code.

~~15.~~ 15. The method of claim 1, wherein at least one of ~~a~~the code block length or ~~a~~the code rate ~~for the encoding code~~ is greater than a threshold.

~~16.~~ 16. The method of claim 1, wherein the encoding code enables hybrid automatic repeat request (HARQ) transmission.

17. The method of claim 1, wherein the encoding code is the partial-stage FRANK polar code, and wherein the partial-stage FRANK polar code enables the transmitter device to satisfy a low-latency requirement of URLLC transmission.

~~17.~~ 18. A method of wireless communication performed by a receiver device, comprising:

receiving an ultra-reliable low-latency communications (URLLC) communication encoded using an encoding code;

determining, for adjusted fractally enhanced kernel (FRANK) polar coding, encoding code for decoding data of the URLLC communication,

wherein the adjusted FRANK polar coding removes a restriction on maximum blocklength of the encoding code, an encoding code rate, and a rate matching pattern that occurs with FRANK polar coding, wherein the adjusted FRANK polar coding enables flexibly extending an existing polar sequence to an arbitrary blocklength polar code, wherein an information bit assignment to an information bit set associated with the encoding code is based at least in part on an adjusted dimensionality factor,

wherein one or more information bits are removed from the information bit set based at least in part on at least one of a code rate or a code block length, wherein the encoding code is all-stage FRANK polar code or partial-stage FRANK polar code, and

wherein the encoding code is constructed for code block shortening or code block puncturing; and

decoding the data of the URLLC communication based at least in part on the information bit assignment to the information bit set.

~~18.~~ 19. The method of claim ~~17~~18, wherein ~~a~~ first one or more information bits ~~is~~are added to the information bit set ~~and a~~, wherein the one or more information bits are second one or more information bits ~~is removed from the information bit set, and~~ , and wherein a first quantity of the first one or more information bits and a second quantity of the second one or more information bits is a common quantity.

~~19.~~ 20. The method of claim ~~17~~18, wherein one or more other information bits ~~is~~are added ~~or removed from~~to the information bit set based at least in part on at least one of ~~a~~the code rate, ~~a~~the code block length, a shortening configuration, a puncturing configuration, a reliability parameter, a bit location parameter, or an error propagation parameter.

~~20.~~ 21. The method of claim ~~17~~18, wherein the receiver device is configured to determine a quantity of information bits for one or more sub-sequences of the information bit set based at least in part on a corresponding sub-sequence length and a mutual information allocation parameter.

~~21.~~ 22. The method of claim ~~17~~18, wherein the receiver device is configured to select the information bit set based at least in part on a length parameter and a reliability order parameter.

~~22.~~ 23. The method of claim ~~17~~18, wherein the encoding code is constructed for all-stage FRANK polar coding and for code block puncturing.

~~23.~~ 24. The method of claim ~~17~~18, wherein the encoding code is constructed for all-stage FRANK polar coding and for code block shortening.

~~24.~~ 25. The method of claim ~~17~~18, wherein the encoding code is constructed for partial-stage FRANK polar coding and for code block puncturing.

~~25.~~ 26. The method of claim ~~17~~18, wherein the encoding code is constructed for partial-stage FRANK polar coding and for code block shortening.

~~26.~~ 27. The method of claim ~~17~~18, wherein the adjusted dimensionality factor is determined based at least in part on a quantity of punctured bits for code block puncturing.

~~27.~~ 28. The method of claim ~~17~~18, wherein the adjusted dimensionality factor is determined based at least in part on a quantity of shortened bits for code block shortening.

~~28.~~ 29. The method of claim ~~17~~18, wherein the adjusted dimensionality factor is determined based at least in part on a block length.

~~29.~~ 30. The method of claim ~~17~~18, wherein the adjusted dimensionality factor is determined based at least in part on a preconfigured value.

~~30.~~ 31. The method of claim ~~17~~18, wherein a plurality of adjusted dimensionality factors, including the adjusted dimensionality factor, correspond to a plurality of sub-sequences of a sequence associated with the information bit set and the encoding code.

~~31.~~ 32. The method of claim ~~17~~18, wherein at least one of ~~a~~code block length or ~~a~~the code rate ~~for the encoding code~~ is greater than a threshold.

~~32.~~ 33. The method of claim ~~17~~18, wherein the encoding code enables hybrid automatic repeat request (HARQ) transmission.

~~33.~~ 34. A transmitter device for wireless communication, comprising:

a memory; and

one or more processors operatively coupled to the memory, the memory and the one or more processors configured to:

construct, for adjusted fractally enhanced kernel (FRANK) polar coding, encoding code for encoding data of an ultra-reliable low latency (URLLC) communication,

wherein the adjusted FRANK polar coding removes a restriction on maximum blocklength of the encoding code, an encoding code rate, and a rate matching pattern that occurs with FRANK polar coding, and wherein the adjusted FRANK polar coding enables the transmitter device to flexibly extend an existing polar sequence to an arbitrary blocklength polar code, wherein an information bit assignment to an information bit set associated with the encoding code is performed based at least in part on an adjusted dimensionality factor,

wherein the transmitter device is configured to remove one or more information bits from the information bit set based at least in part on at least one of a code rate or a code block length, wherein the encoding code is all-stage FRANK polar code or partial-stage FRANK polar code, and

wherein the encoding code is constructed for code block shortening or code block puncturing; and

transmit the URLLC communication encoded using the encoding code based at least in part on the information bit assignment to the information bit set.

~~34.~~ 35. The transmitter device of claim ~~33,~~34, wherein the transmitter device is further configured to add ~~a~~ first one or more information bits to the information bit set ~~and remove a,~~ wherein the one or more information bits are second one or more information bits ~~from the information bit set~~, and

wherein a first quantity of the first one or more information bits and a second quantity of the second one or more information bits is a common quantity.

~~35.~~ 36. The transmitter device of claim ~~33,~~34, wherein the transmitter device is further configured to add one or more information bits ~~or remove one or more information bits from~~to the information bit set based at least in part on at least one of ~~a~~the code rate, ~~a~~the code block length, a shortening configuration, a puncturing configuration, a reliability parameter, a bit location parameter, or an error propagation parameter.

~~36.~~ 37. The transmitter device of claim ~~33,~~34, wherein the transmitter device is configured to determine a quantity of information bits for one or more sub-sequences of the information bit set based at least in part on a corresponding sub-sequence length and a mutual information allocation parameter.

~~37.~~ 38. The transmitter device of claim ~~33,~~34, wherein the transmitter device is configured to select the information bit set based at least in part on a length parameter and a reliability order parameter.

~~38.~~ 39. The transmitter device of claim ~~33,~~34, wherein the encoding code is constructed for all-stage FRANK polar coding and for code block puncturing.

~~39.~~ 40. The transmitter device of claim ~~33,~~34, wherein the encoding code is constructed for all-stage FRANK polar coding and for code block shortening.

~~40.~~ 41. The transmitter device of claim ~~33,~~34, wherein the encoding code is constructed for partial-stage FRANK polar coding and for code block puncturing.

~~41.~~ 42. The transmitter device of claim ~~33,~~34, wherein the encoding code is constructed for partial-stage FRANK polar coding and for code block shortening.

~~42.~~ 43. A receiver device for wireless communication, comprising:

a memory; and

one or more processors operatively coupled to the memory, the memory and the one or more processors configured to:

receive an ultra-reliable low-latency communications (URLLC) communication encoded using a code;

determine, for adjusted fractally enhanced kernel (FRANK) polar coding, encoding code for decoding data of the URLLC communication,

wherein the adjusted FRANK polar coding removes a restriction on maximum blocklength of the encoding code, an encoding code rate, and a rate matching pattern that occurs with FRANK polar coding, wherein the adjusted FRANK polar coding enables flexibly extending an existing polar sequence to an arbitrary blocklength polar code, wherein an information bit assignment to an information bit set associated with the encoding code is based at least in part on an adjusted dimensionality factor,

wherein one or more information bits are removed from the information bit set based at least in part on at least one of a code rate or a code block length, wherein the encoding code is all-stage FRANK polar code or partial-stage FRANK polar code, and

wherein the encoding code is constructed for code block shortening or code block puncturing; and

decode the data of the URLLC communication based at least in part on the information bit assignment to the information bit set.

~~43.~~ ~~44.~~ The receiver device of claim ~~42,~~43, wherein ~~a~~ first one or more information bits ~~is~~are added to the information bit set ~~and a~~, wherein the one or more information bits are second one or more information bits ~~is removed from the information bit set, and~~ , and wherein a first quantity of the first one or more information bits and a second quantity of the second one or more information bits is a common quantity.

~~44.~~ 45. The receiver device of claim ~~42,~~43, wherein one or more other information bits ~~is~~are added ~~or removed from~~to the information bit set based at least in part on at least one of ~~a~~the code rate, ~~a~~the code block length, a shortening configuration, a puncturing configuration, a reliability parameter, a bit location parameter, or an error propagation parameter.

~~45.~~ 46. The receiver device of claim ~~42,~~43, wherein the receiver device is configured to determine a quantity of information bits for one or more sub-sequences of the information bit set based at least in part on a corresponding sub-sequence length and a mutual information allocation parameter.

~~46.~~ 47. The receiver device of claim ~~42,~~43, wherein the receiver device is configured to select the information bit set based at least in part on a length parameter and a reliability order parameter.

~~47.~~ 48. The receiver device of claim ~~42,~~43, wherein the encoding code is constructed for all-stage FRANK polar coding and for code block puncturing.

~~48.~~ 49. The device of claim ~~42,~~43, wherein the encoding code is constructed for all-stage FRANK polar coding and for code block shortening.

~~49.~~ 50. The receiver device of claim ~~42,~~43, wherein the encoding code is constructed for partial-stage FRANK polar coding and for code block puncturing.

~~50. The device of claim 42, wherein the encoding code is constructed for partial-stage FRANK polar coding and for code block shortening.~~