

Title (en)

DESIGN OF FIXED LENGTH CODING SCHEME FOR PROBABILISTIC SHAPING APPLIED TO NEW RADIO PHYSICAL LAYER

Title (de)

ENTWURF EINES CODIERUNGSSCHEMAS MIT FESTER LÄNGE ZUR PROBABILISTISCHEN FORMGEBUNG FÜR EINE NEUE PHYSIKALISCHE SCHICHT IN NEW RADIO

Title (fr)

CONCEPTION DE PLAN DE CODAGE À LONGUEUR FIXE POUR MISE EN FORME PROBABILISTE APPLIQUÉE À UNE NOUVELLE COUCHE PHYSIQUE RADIO

Publication

**EP 4066418 A4 20231220 (EN)**

Application

**EP 20892617 A 20201029**

Priority

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- FI 2020050713 W 20201029

Abstract (en)

[origin: WO2021105548A1] A method, an apparatus and a computer program relating to a design of fixed length coding scheme for probabilistic shaping applied to new radio (NR) physical layer are disclosed, wherein an initialization of a lookup table with inconstancies is generated by assigning a plurality of index labels, the index labels representing an input to a distribution matcher, to a plurality of output labels of the distribution matcher, the output labels comprising a plurality of output symbols; wherein each of the plurality of output labels are capable of being assigned to two or more of the index labels, to merge the two or more index labels together, and further to shape an output probability distribution of the plurality of output symbols to be closer to a channel probability distribution associated with an error of a channel used for transmission or reception; wherein at least one of an encoding or decoding operation is performed using the lookup table with inconstancies to encode the input to the distribution matcher or to decode the plurality of output symbols.

IPC 8 full level

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CPC (source: EP)

**H04L 1/0042** (2013.01); **H04L 1/0047** (2013.01); **H04L 1/0057** (2013.01)

Citation (search report)

- [A] WO 2019197043 A1 20191017 - HUAWEI TECH DUESSELDORF GMBH [DE], et al
- [XAI] YOSHIDA TSUYOSHI ET AL: "Hierarchical Distribution Matching for Probabilistically Shaped Coded Modulation", JOURNAL OF LIGHTWAVE TECHNOLOGY, IEEE, USA, vol. 37, no. 6, 15 March 2019 (2019-03-15), pages 1579 - 1589, XP011717097, ISSN: 0733-8724, [retrieved on 20190329], DOI: 10.1109/JLT.2019.2895065
- [A] PIKUS MARCIN ET AL: "Arithmetic Coding Based Multi-Composition Codes for Bit-Level Distribution Matching", 2019 IEEE WIRELESS COMMUNICATIONS AND NETWORKING CONFERENCE (WCNC), IEEE, 15 April 2019 (2019-04-15), pages 1 - 6, XP033651977, DOI: 10.1109/WCNC.2019.8885538
- See also references of WO 2021105548A1

Designated contracting state (EPC)

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