

Title (en)

QUANTUM KEY DISTRIBUTION TRANSMITTER, RECEIVER AND METHOD

Title (de)

SENDER, EMPFÄNGER UND VERFAHREN ZUR QUANTENSCHLÜSSELVERTEILUNG

Title (fr)

ÉMETTEUR, SYSTÈME ET PROCÉDÉ DE DISTRIBUTION QUANTIQUE DE CLÉS

Publication

**EP 4248608 A1 20230927 (EN)**

Application

**EP 20815738 A 20201123**

Priority

EP 2020083068 W 20201123

Abstract (en)

[origin: WO2022106036A1] A continuous-variable quantum key distribution, CV-QKD, transmitter (100) comprising: a quantum random bit generator, QRBG, (102) operable to generate random bits; symbol encoding apparatus (104) operable to map the random bits to transmission symbols defining an approximating constellation diagram in a complex plane, the transmission symbols being distributed in both amplitude and phase across the approximating constellation diagram and the transmission symbols having a probability of occurrence distribution within the approximating constellation diagram that approximates a continuous two-dimensional Gaussian distribution; and optical transmission apparatus (106) configured to encode the transmission symbols on a single-mode coherent state optical carrier signal. A CV-QKD receiver comprising: an optical coherent receiver operable to receive a single-mode coherent state optical carrier signal encoded with transmission symbols and to detect the transmission symbols; symbol decoding apparatus operable to decode the detected transmission symbols into bits; and error-correcting apparatus operable to apply a binary error-correction code to the bits. A method of CV-QKD.

IPC 8 full level

**H04L 9/08** (2006.01)

CPC (source: EP)

**H04L 9/0858** (2013.01)

Citation (search report)

See references of WO 2022106036A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

Designated validation state (EPC)

KH MA MD TN

DOCDB simple family (publication)

**WO 2022106036 A1 20220527**; EP 4248608 A1 20230927

DOCDB simple family (application)

**EP 2020083068 W 20201123**; EP 20815738 A 20201123