

QUANTUM RANDOM NUMBERS GENERATOR

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Commercialization opportunities



- ➔ License
- ➔ Transfer of ownership
- ➔ Joint further research and commercialization

IP Status



Patent protection:
PCT/PL2020/050032

Implementation progress



TRL 4
Technology validated
in laboratory conditions

The presented invention relates to a method and device for the quantum generation of random numbers. The standard measure of the quality of randomness generated is called min-entropy and is related to the probability of guessing a number of the sequence generated before it is announced. A good random number generator should be able to produce a bit string with a high entropy at a high rate. The goal of the proposed technology is to provide the generator and methods that enable to generate unpredictable string of numbers at high rates, characterized by high entropy which can be self-tested in real time.

The device for a quantum number generator comprises of: interferometer, a control unit connected to the signal source, that modify the signal's properties, and detectors for measuring the signal's intensity by electrical wires. Detectors are configured to measure signal intensity and send the measurement results via electrical wires to the control unit. The control unit performs a self-test based on the measurement results and returns the result of self-test. The device is distinguished from other quantum random number generators by the fact that it can perform self-testing.

The invention can be implemented in generation of random numbers in many branches: telecommunication, banking, data centres, financial market, power distribution, telecom, industry management, public administration, air traffic control, autonomous car, platooning, ai & machine learning, cryptography, blockchain, smart city and lotteries and gaming.

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