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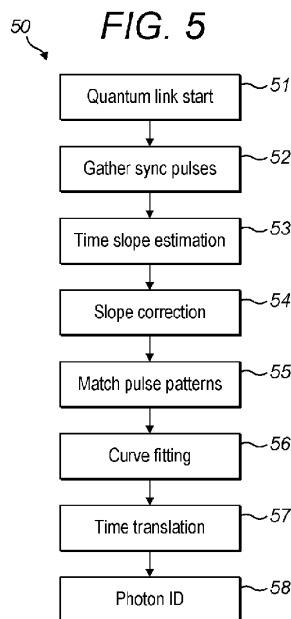
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(54) **Title:** A SYSTEM AND METHOD FOR TIME SYNCHRONISATION



(57) **Abstract:** A method and system for time synchronisation in a satellite based quantum key distribution (QKD) system, by: at a transmitter, emitting a first series of laser pulses, the first series of laser pulses being encoded to form a quantum beam; at the transmitter, emitting a second series of laser pulses, the second series of laser pulses having a predetermined repeating pattern; and at the transmitter, sending the first and second series of laser pulses to a receiver. At a receiver, receiving the first series of laser pulses and the second series of laser pulses at the receiver and determining reception times of pulses of the first series of laser pulses and pulses of the second series of laser pulses. Comparing the received second series of laser pulses to the predetermined pattern at different points in the predetermined pattern, and determining the point at which the received second series of laser pulses is most strongly correlated to the predetermined pattern; with the received second series of laser pulses aligned to the predetermined pattern at the determined point, determining a

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relationship fitting respective reception times of a plurality of the received pulses to respective emission times of corresponding ones of the second series of laser pulses; and using the determined relationship to convert between reception times of the first series of laser pulses and emission times of corresponding ones of the first series of laser pulses.