A Method for Fast Beam Scanning and Device Discovery in 5G Millimeter Wave Systems

Invention: This technology, known as FastLink, is a technique to quickly and accurately discover devices on a cellular network using highly directional beams and a unique binary search algorithm. This device is designed for use in 5G systems to provide faster initial access.

Background: 5th generation, or 5G, is the next iteration of cellular network infrastructure coming after 4G-LTE (Long Term Evolution). 5G is expected to be capable of reaching downlink speeds of up to 20 Gb per second (Gbps) and average 10Gbps compared to the current 4G LTE standard of 2 gbps. 5G will revolutionize not only how we communicate but how other technologies in our lives operate. The network operates on the millimeter wave length (mmW) frequency, a new area of bandwidth for cellular operators. Large cellular communication service providers (CCSPs) like AT&T and Verizon have already begun to roll out the technology in major cities across the United States, with 3% of global CCSPs expected to have the technology by 2020.

Applications:

• Initial access in 5G mmWave wireless systems

Advantages:

• Provides significantly faster and more accurate device detection

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