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(54) SMART ANTENNA SYSTEM AND METHOD

(76) Inventors: **Omri Hovers**, Petah Tikva (IL); **Shahar Kagan**, Nes-Chiyona (IL)

Correspondence Address:
BERKELEY LAW & TECHNOLOGY GROUP, LLP
1700 NW 167TH PLACE
SUITE 240
BEAVERTON, OR 97006 (US)

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(57) **ABSTRACT**

A smart antenna apparatus including a receiving system, one or more beam analysis modules, a control channel monitoring module, a processing system, and a receiving beam switch is provided. The receiving system is operable to receive a plurality of uplink beams, each including traffic signals transmitted by a mobile station. The beam analysis modules are operable to analyze the uplink beams to determine one or more characteristics of each uplink beam. The control channel monitoring module is operable to monitor control channel signals being communicated from a base station transceiver. The control channel signals include synchronization signals. The processing system is operable to synchronize the smart antenna apparatus with the base station transceiver using the synchronization signals received by the control channel monitoring module. The processing system is further operable to determine a selected beam from the plurality of uplink beams based at least in part on the one or more characteristics determined by the beam analysis modules. The receiving beam switch is operable to switch to the selected beam to allow the selected beam to be communicated to the base station transceiver.