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(54) Title: CO-LOCATED SATELLITES WITH GROUND BASED PROCESSING

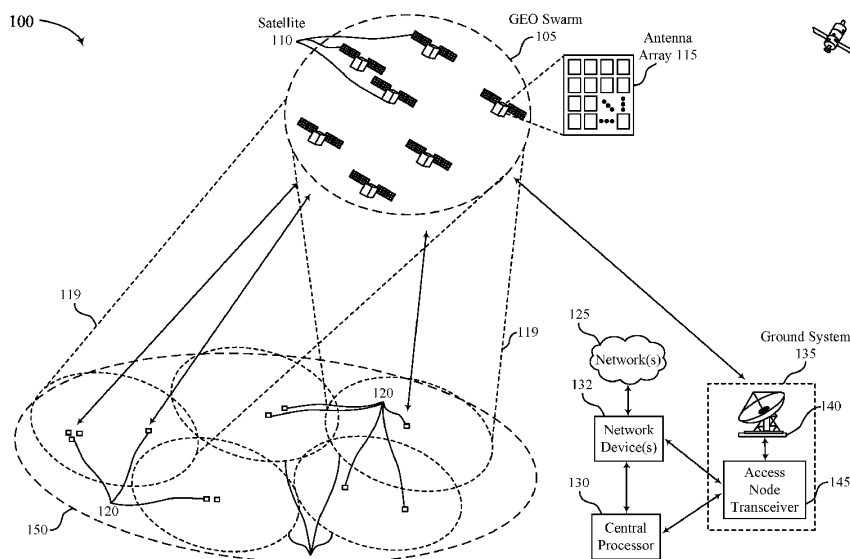


FIG. 1

(57) **Abstract:** Methods, systems, and devices for co-located satellites with ground based processing are described. A set of co-located satellites may be configured to collect a set of return link signal components, where each co-located satellite includes a first payload configured to receive a respective return link signal component including one or more return link signal transmitted from one or more terminals and a second payload configured to transmit a representation of the respective return link signal component. One or more ground stations may be configured to receive the representations of the respective return link signal components. A central processor may be configured to apply a set of beamforming coefficients to the representations of the respective return link signal components received by the one or more ground stations to obtain one or more return link beam signals corresponding to one or more return link beams from the set of co-located satellites.

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