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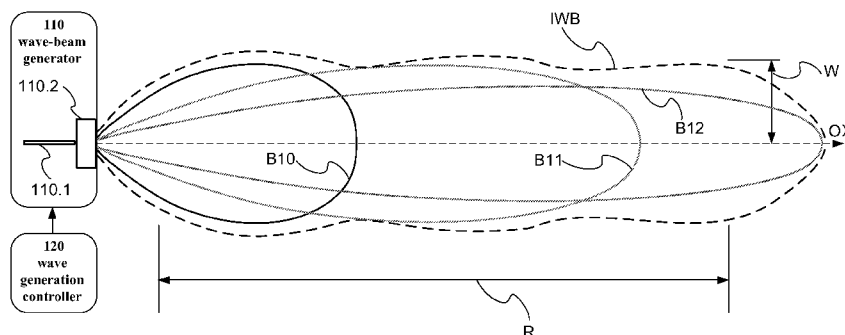


Fig. 1

(57) **Abstract:** There are provided methods and systems for producing a wave-beam having substantially constant lateral extent over a desired range of distances, and interrogation and response system and methods utilizing the same. The method for producing a wave-beam having substantially constant lateral extent includes generating a plurality of at least partially incoherent constituent wave-beams having different divergences and directing the plurality constituent wave-beams to propagate along substantially parallel propagation axes such that the constituent wave-beams at least partially overlap and superpose to form a combined wave-beam. The divergences and intensities of the constituent wave-beams are selected such that the combined wave-beam has a desired substantially constant lateral extent over a desired range of distances along said propagation axes.