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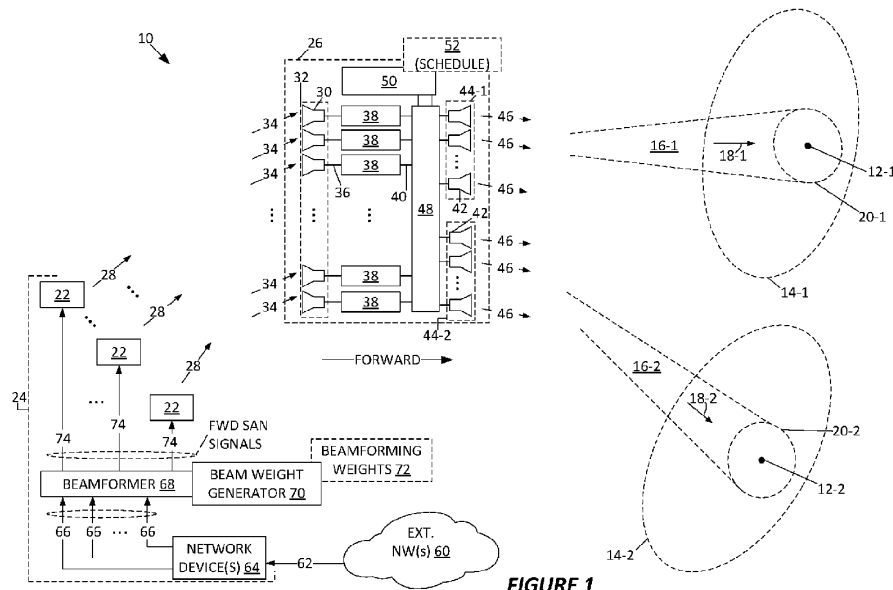


FIGURE 1

(57) Abstract: A satellite communications system and method of operation provides service to pluralities of user terminals in multiple non-overlapping user coverage areas, based on performing ground-based, end-to-end beamforming simultaneously with respect to the multiple user coverage areas. A satellite communications system and method of operation provides service to pluralities of user terminals in multiple non-overlapping user coverage areas, based on performing ground-based, end-to-end beamforming simultaneously with respect to the multiple user coverage areas. The system provides a number of simultaneous beams in the forward or reverse directions and controlling the allocation of beams to respective user coverage areas determines the capacity allocations for the respective user coverage areas. A multiplicity of transmit/receive paths onboard a satellite in the system supports the end-to-end beamforming and controlling the beam allocations is based on controlling the allocation of such paths to the respective user coverage areas.

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