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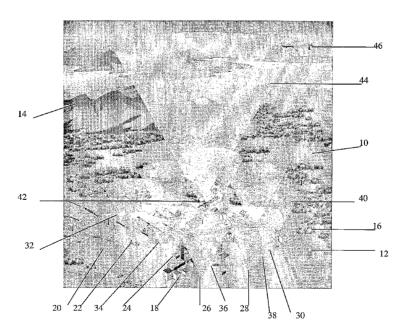
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(54) Title: SOLAR BLIND ULTRAVIOLET COMMUNICATION SYSTEM FOR UNATTENDED GROUND SENSOR NETWORK



(57) Abstract: A wireless inter-nodal communication system which operates in the solar blind ultraviolet (200 nm - 280 nm) and is capable of providing covert non line-of-sight operation. The present invention also encompasses a method for providing inter-nodal communications in an unattended ground sensor network (22, 24, 26, 28 and 30) comprising the steps of making use of line-of-sight ultra-violet radiation with a wavelength within the solar blind region, and in appropriate situation preferably employing wide field-of-view receivers and large transmitter cone angles (82).



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X	US 4,493,114 (GELLER et al) 9 January 1985 (09.0)	1.1985), column 1, lines 14-65.	1,11-13,16,25-26	
X	SHAW, G. et al., NLOS UV Communication for Distributed Sensor Systems, Proceedings of SPIE Vol. 4126, 2000, pages 83-84, 87 and 89.		1-2,11,15-16,25, 28	
Y			3-10,12-14,17-24,26-27	
Y	STOTTS, L. et al., Unattended Ground Sensor Related Technologies; am Army Perspective, Proceedings of SPIE Vol. 4743, 2002, FIG. 3.		3-10,12-14,17-24,26-27	
Y	US 2002/0163699 A1 (KAVEHRAD et al) 7 November FIG. 3, FIG. 4.	7-10, 12-14,21-24, 26- 27		
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