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Abstract of the Disclosure

This invention relates to optical communications and is designed for use in data transmission networks.

The technical effect of this invention consists in lowering capital and operating costs per unit of information transmitted and at the same time raising the overall maximum access speed. Subsidiary technical effects include allowing various groups of users to be organized at different service levels within a single service sector by using different electromagnetic radiation beams (including a single wavelength), and also enhancing security against unauthorized access.

The method comprises extracting data packets addressed to the subscribers of a subscriber access point from the network and transmitting the information contained in these packets by a directional electromagnetic radiation beam. The beam is directed at the receiving devices of subscribers at their respective addresses. The claimed method is used to transmit information to subscribers by optical-range electromagnetic radiation while dynamically controlling the spatial characteristics of the electromagnetic radiation beam using the address information of the packets so that the radiation beam is directed to the receiving device of a respective subscriber during transmission of a particular data packet. This embodiment of the invention uses an electromagnetic radiation beam of narrow angular divergence and the direction of its propagation is varied dynamically. In another embodiment of the invention, the spatial characteristics of the beam are controlled by a dynamic hologram that is, for each registered subscriber address, an optical match of the aforesaid electromagnetic radiation source and the receiver of the subscriber at that address. 1 independent claim and 2 dependent claims, 2 illustrations.



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