CLAIMS

1. A communication system, comprising:

a plurality of network members, each one comprising at least one first communication interface adapted to communicatively couple to any other one of the of said plurality of network members and at least one user device via optical wireless communication (OWC);

at least one gateway member, comprising at least one second communication interface adapted to communicatively couple to any one of said plurality of network members via optical wireless communication (OWC), said at least one second communication interface is further adapted to communicatively couple to at least one external communication network;

at least one portable access member, operably connectable to a user device and comprising at least one third communication interface adapted to communicatively couple said user device to any one of said plurality of network members via optical wireless communication (OWC), and

wherein said communication system is adapted to form any one of a duplex ring network topology and a duplex mesh network topology, utilising said plurality of network members and said at least one gateway member.

2. A communication system according to claim 1, wherein at least a portion of said plurality of network members and said at least one gateway member are adapted to form an optical wireless communication (OWC) backbone network of said communication system.

3. A communication system according to any one of the preceding claims, wherein any one of said first communication interface, said second communication interface and said third communication interface is adapted to provide Visible Light Communication (VLC) and Infrared Light Communication.

4. A communication system according to any one of the preceding claims, wherein said first communication interface comprises:

at least one uplink transceiver element, adapted to receive data from a user device and/or any other one of said plurality of network members and transmit the data to any other one of said plurality of network members and/or said at least one gateway member, and

at least one downlink transceiver element, adapted to receive data from any other one of said plurality of network elements and/or said at least one gateway member and transmit the data to said user device and/or any other one of said plurality of network members.

5. A communication system according to claim 4, wherein said uplink transceiver element is adapted to utilise Infrared Light Communication.

6. A communication system according to any one of claims 4 or 5, wherein said downlink transceiver element is adapted to utilise Visible Light Communication (VLC).

7. A communication system according to any one of the preceding claims, wherein any one of said plurality of network members further comprises a Li-Fi user access port operably coupled to said first communication interface and adapted to establish a Li-Fi communication channel with said at least one portable access member.

8. A communication system according to claim 7, wherein said Li-Fi user access port is at least one light source.

9. A communication system according to claim 8, wherein said at least one light source comprises at least one LED.

10. A communication system according to any one of the preceding claims, wherein said at least one gateway member is adapted to control any one of said plurality of network members.

11. A communication system according to any one of the preceding claims, wherein said optical wireless communication (OWC) is adapted to provide optical communication via electromagnetic radiation (EMR) with a wavelength in any one of the visible light spectrum, the infrared light spectrum or ultraviolet light spectrum.

12. A communication system according to any one of the preceding claims, wherein at least a predetermined portion of said plurality of network members further comprises a fourth communication interface adapted to communicatively couple to any other one of said predetermined portion of said plurality of network members via Wireless Local Area Network (WLAN) communication and/or Local Area Network (LAN) communication.

13. A communication system according to claim 12, wherein said Wireless Local Area network (WLAN) is adapted to provide wireless communication via electromagnetic radiation (EMR) with a wavelength in the radio frequency spectrum.