Luminet Solutions Ltd
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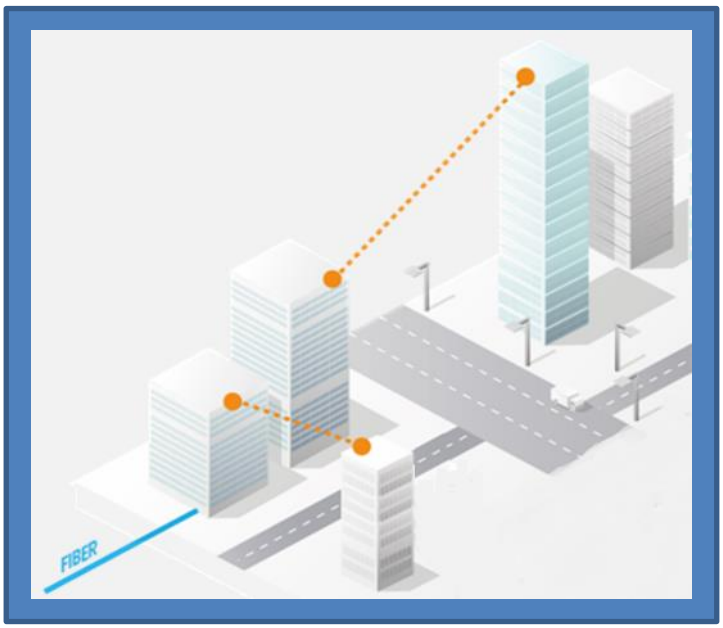
13th November 2023

Re: Overview of Luminet Technology and Health & Safety Statement

This is with reference to Luminet proposal for installation of radio antennas on **Cromwell Tower**, Barbican, London.

Why and What type of Technology and Communication Equipment are proposed?
Fibre is limited in reach and sometimes does not reach a target building. There are then 2 options:

1. Trench a new fibre. This involves weeks of disruption to the public, due to trenching and ducting underneath the pavement and/or road.
2. Install a wireless connection between one building (which already has a fibre connection) to the target building next. This may be thought of *wireless fibre extension*:



Luminet's core specialism is to provide highspeed wireless broadband connections under its IEEE standard 802.16 **Fixed Broadband Wireless Access** infrastructure across central London and helping businesses to avoid internet connectivity challenges / delays during standard fibre installation.

Luminet is utilizing following two types of technologies and equipment that replaces fibre.

- **Point to point connections through SIKLU**
- Point to multipoint connections through RADWIN

Approx. 90% of all installed equipment at Luminet sites are point-to-point equipment (SIKLU) that can serve high bandwidths with up to **10Gbps**, with the other 10% of installs using point-to-multipoint equipment with bandwidths of up to 100Mbps.

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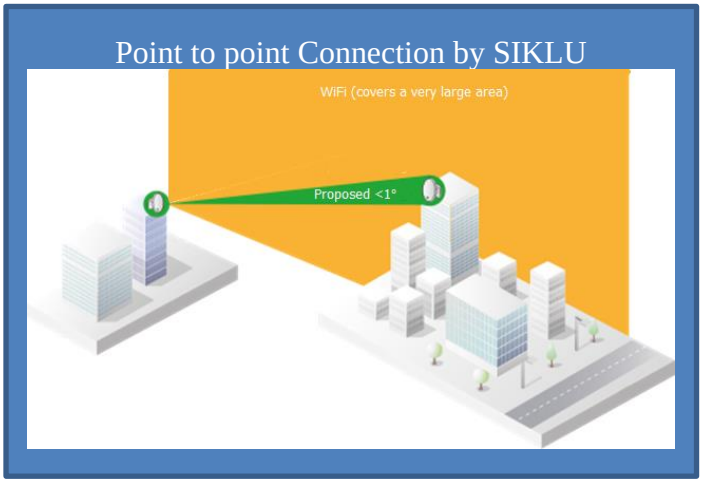
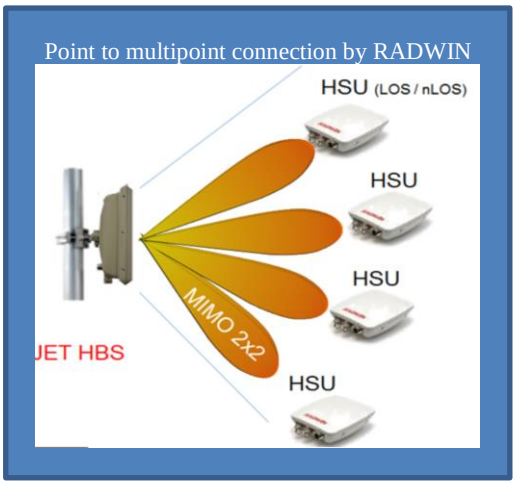
These connections are usually disruption free, as it merely involves placing an antenna on the roofs of both buildings.

Below are some examples showing the proposed device in similar installations:

Is the prosed Communication Equipment related to WiFi?
No. WiFi is a standard protocol that allows several devices (e.g., mobile phones, computers, etc.) to connect. Also, the WiFi signal is designed to cover a large area, to maximize the number of devices that can connect.

The proposed equipment are completely different and use a proprietary protocol that ensures only two devices are able to connect. Significantly, it operates in a completely different frequency space, transmits an *extremely narrow beam*, and the signal is designed to be picked up by the far-end radio only. This signal is virtually undetectable anywhere outside the line of transmission and heavily depend on Line of Site, unlike 4G/5G mobile signals which can penetrate walls and buildings.





Is the prosed Communication Equipment related to 5G?
No. **5G is a mobile standard**, connecting *mobile* devices (phones, laptops, etc.). The signal needs to cover a large sector and penetration through building walls, furniture etc. Luminet's proposed equipment operates in a completely different frequency space, does not have the ability to penetrate buildings, and covers a very small area, using an extremely narrow transmission beam-width. Crucially, the power output is significantly lower than that of a mobile (4G, 5G) base station.

Moreover, Luminet has no future plans to start 4G/5G mobile services that require a different set of equipment and infrastructure.

Is the proposed Communication Equipment Safe?
Yes – the proposed equipment meets all the international safety limits (exposure to radiation hazards) at distance zero from the antenna. Practically, this means no exclusion zone, and that people may spend a long time in the immediate vicinity of these devices, without harm.

Further, all proposed equipment conforms with ICNIRP Guidelines and power transmission threshold as per ETSI regulations. Overall the radiations emitted by such antennas are close to normal wireless internet-routers at home and would not pose a risk to public health. 4G/5G mobile antennas are usually highly powered hence require safety exclusion zones, in contrast Luminet antennas are of low power and do not require such exclusion zones.

A common concern about base stations and local wireless network antennas relates to the possible long-term health effects that whole-body exposure to the radio frequency (RF) signals may have. To date, the only health effect from RF fields identified in scientific reviews has been related to an increase in body temperature (> 1 °C) from exposure at very high field intensity found only in certain industrial facilities, such as RF heaters, and only at very close proximity to the emitting device. The levels of RF exposure from base stations and wireless networks are so low that the temperature increases are insignificant and do not affect human health.

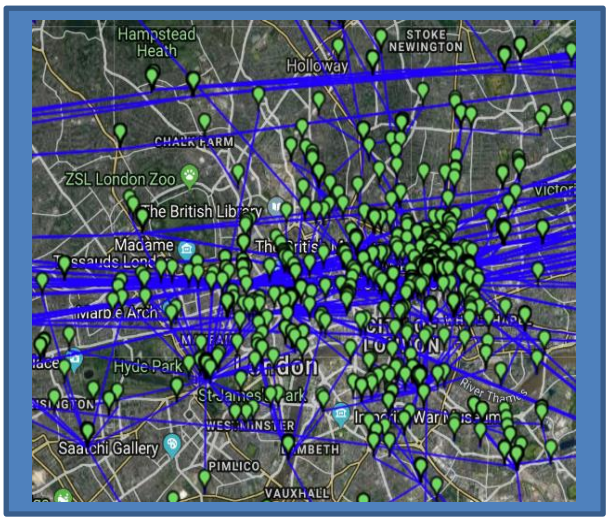
The strength of RF fields is greatest at its source and diminishes quickly with distance. Recent surveys have indicated that RF exposures from base stations and wireless technologies in publicly accessible areas (including schools and hospitals) are normally thousands of times below international standards.

Considering the very low exposure levels and research results collected to date, there is no convincing scientific evidence that the RF signals from base stations and wireless networks cause adverse health effects.

https://www.who.int/teams/environment-climate-change-and-health/radiation-and-health/non-ionizing/base-stations-wireless-technologies#:~:text=From%20all%20evidence%20accumulated%20so,expected%20from%20exposure%20to%20them.

Is the proposed Communication Equipment used elsewhere?

Yes. It is estimated that over thousands such devices are installed in the UK, a large proportion of which in London. The following illustrates some of these in Central London (each green dot designates a device)



Source data from Ofcom on below link
https://www.ofcom.org.uk/manage-your-licence/radiocommunication-licences/fixed-terrestrial-links

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