

Emerging Trends in Mobile Communications

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1 Li-Fi

All men must serve.

The faceless men, Martin (*A Dance with Dragons*)

1.1 Introduction

Today, when the world is exploring 5G technology, and smart devices are connecting to the cloud for fluid communication and IOT. Daily data traffic is increasing at the steepest rate. It has been estimated that, mobile data traffic will reach to 77 exabytes per month by 2022. *Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2017-2022 White Paper* It is not hidden from the industry that current transmission system is under pressure.

To revive the radio-wave spectrum from high traffic concentration, a new technology is attracting scientists, it's Visible light communication using the concept of Orthogonal Frequency Division Multiplexing (OFDM) or simply termed as Li-Fi (Light Fidelity).

Li-Fi was first showcased to the world by Prof. Herald Haas during a TEDGlobal Talk in July 2011. He showed the potential of the technology to be integrated in the future communication system. From then, scientists from various parts of world started studying for various ways to improve the transmission method. The technology uses visible-light spectrum for data transmission, which comprises of a huge bandwidth of 400THz as compared to radio-waves with just 300GHz. Moreover, visible light does not have any adverse effect on our body as that of radio-waves. Hence shows great

References

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