LiFi (visible light communication) is becoming an increasingly important technology as the unlicensed ISM band gets overcrowded. LiFi, with its high data rates, emerges as a promising solution to provide connectivity in an aircraft using overhead LED lights thereby reducing the interference with other wireless technologies and reducing the overall aircraft radio emissions. The integration of LiFi into existing communication systems is best envisioned in the form of wireless Heterogeneous Networks or HetNets where the short range, additional capacity providing LiFi cells complement the broader coverage providing WiFi cells.

In this work, the student is expected to develop modules necessary for the simulation of a LiFi network in NS3 and use existing WLAN modules to simulate an in-cabin heterogeneous LiFi-WiFi network to analyze the attainable data rates, reliability and other QoS parameters.

Related Reading:


Prerequisites

- Object-Oriented Programming C++, Python
- Experience with NS3 module development preferable
- Sound knowledge of Wireless Communication, especially WLAN

Advisors

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