

**Project: IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs)**

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**Abstract:** [Scope and purpose of proposed project and reason for the proposed project are described.]

**Purpose:** [Contribution to IEEE 802.15 SG-VLC]

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# VLC PAR Draft

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# Outline

- Scope of proposed project
- Purpose of proposed project
- Reason for the proposed project

# Scope of proposed project

- This project will define a PHY and MAC standard for short-range wireless optical communication using visible light. The visible light is from 380 nm to 780 nm in wavelength and under eye safety regulation (such as IEC60825) in radiation power. The communication will be to support audio and video multimedia services in personal areas. The standard will consider mobility of the visible link, compatibility with visible-light infrastructures, impairments due to noise and interference from ambient lights, health and other environmental effects, and MAC to accommodate visibility.

# Purpose of proposed project

- The purpose of the proposed standard is to provide an international standard for short-range wireless optical communication using visible light. The standard will provide; (i) additional capacity of several hundred THz in an unlicensed visible spectrum. (ii) immunity to electromagnetic interference and noninterference to RF systems, (iii) additional security by allowing the user to see the communication channel, and (iv) communications augmenting and complementing existing services (such as illumination, display, indication, decoration, and etc) from visible-light infrastructures.

# Reason for the proposed project

- Visible light is drawing great interests as new communication media due to the following reasons. Firstly, solid-state light sources are rapidly replacing conventional ones in illumination and display infrastructures. It thus becomes possible to carry communication data on the visible light. Secondly, the visible band is free from frequency regulation and RF interference so that it is well-suited to RF-crowded or RF-restricted environments. Thirdly, the unique feature of visibility can enhance the physical-layer security and offer intuitive usage.
- Potential applications include secure point-to-point communication, indoor Location Based Service (LBS), secure point-to-Multipoint communication (office, hospital, air plane), Intelligent Transportation System (ITS), information broadcast, and etc.
- The visible light communication standard will provide economic opportunities to equipment manufacturers, component suppliers, service providers, infrastructure operators.