

# 1. AU2020103224 - SECURE VISIBLE LIGHT COMMUNICATION THROUGH DRL-SMART BEAMFORMING TO PROTECT AGAINST EAVESDROPPING OF WIRETAP



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### Title

[EN] Secure Visible light communication through DRL-Smart Beamforming to protect against eavesdropping of wiretap

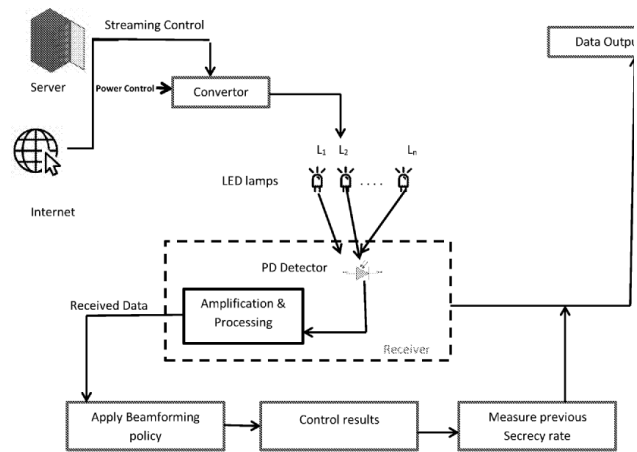


Fig 1 DRL-Smart Beamforming Scenario

### Abstract

[EN] Visible light communication is a smart communication technique for its unique features of license-free light spectrum, low cost of implementation and robustness against interference. The VLC provides line-of-sight transmission and better coverage property among its competitive communication techniques and are prone to security loopholes affecting actual legitimate users and network administrator. The visible light communication channel broadcasts faces the issue of VLC downlink susceptible to unauthorized terminals in offices and shopping zones. The transmitting information can be eavesdropped or wiretapped by malicious attackers in the light range. An efficient and secure transmission technique required to avoid eavesdropping. The scenario considered here is of multiple input single output (MISO) where there is multiple light fixtures to transmit and legitimate users and intruder who attacks the information through wiretap channel. The invention framework has smart beamforming over the MISO VLC wiretap channel which reduces the capability of information interference. The Deep reinforcement learning based VLC beamforming control scheme invention to handle dimensionality curse for both observation and action and to avoid quantization error in RL based algorithm. Fig 1 Fig 1 DRL-Smart Beamforming Scenario

