FSO/RF
Hybrid Communication system

AIM & OBJECTIVES

The aim of the project is to develop a wireless communication system characterized by increased transmission reliability, security and interference resistance

RF link
- **low data rate**
- **relatively immune to cloud**
- **sometimes affected by rain**
- **high probability of detection and interception**
- **requires permission of national communications organizations**

FSO link
- **higher Data Rate**
- **must have clear conditions**
- **less degradation than RF in rain,**
- **low probability of detection**
- **low probability of interception**
- **without limitations of communication organizations**

Complementary systems

Constructed FSO transmitter

Constructed FSO receiver

Project description

BASIC PRINCIPLES

FSO/RF data link is a wireless communication technology, in which the data is transferred by optical/radio signals transmission in free space. When the radio or the FSO signal is blocked, the counterpart is automatically used—no loss of data, and no delay. This technology can be an alternative or complement tool to other non-wire communication systems.

SYSTEM BENEFITS

The hybrid FSO/RF data transfer devices makes it possible to obtain:
- **better data range** in the case of worse weather conditions (light haze) and turbulence,
- **better security performances** for common - used optoelectronics devices (night vision googles, cameras and detectors).

APPLICATION:

- Static Ground-to-Static Ground (e.g. within Base),
- Static Ground – to – Air (from an airborne platform),
- Ship–to-Ship,
- Dynamic Air to Dynamic Ground, (ground station with vehicle-mounted or man-portable system).

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