

AIM & OBJECTIVES

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

LEADER: **Military University of Technology**

Contributors:

- Institute of Electron Technology,
- Vigo Systems SA,
- KenBIT



DIRECTIONS OF COOPERATION

- telecommunications technology: network technology, communication protocols, signal modulation,
- radio communications: design of the RF modules, RF signals measurements, ECM investigations,
- mechanical platforms.



PROJECT LEAD

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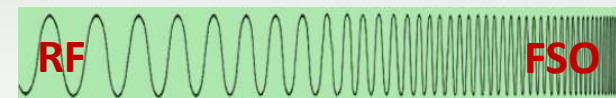
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WAT

Military University of Technology



FSO/RF Hybrid Communication system



FSO/RF Hybrid Communication system

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 with optical transmission at the wavelength of NIR range have been designed, but the application of LWIR radiation makes it possible to obtain:

- **better data range** in the case of worse weather conditions (light haze) and turbulence,
- **better security performances** because LWIR radiation is invisible for common-used optoelectronics devices (night vision goggles, NIR cameras NIR and detectors).

The hybrid FSO/RF telecommunications system:

- **FSO** – free space optics basing on open-path laser communication
- **RF** – radio frequency.

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

BASIC APPLICATION

