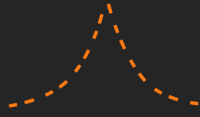


OPTO-PYROTECHNICS



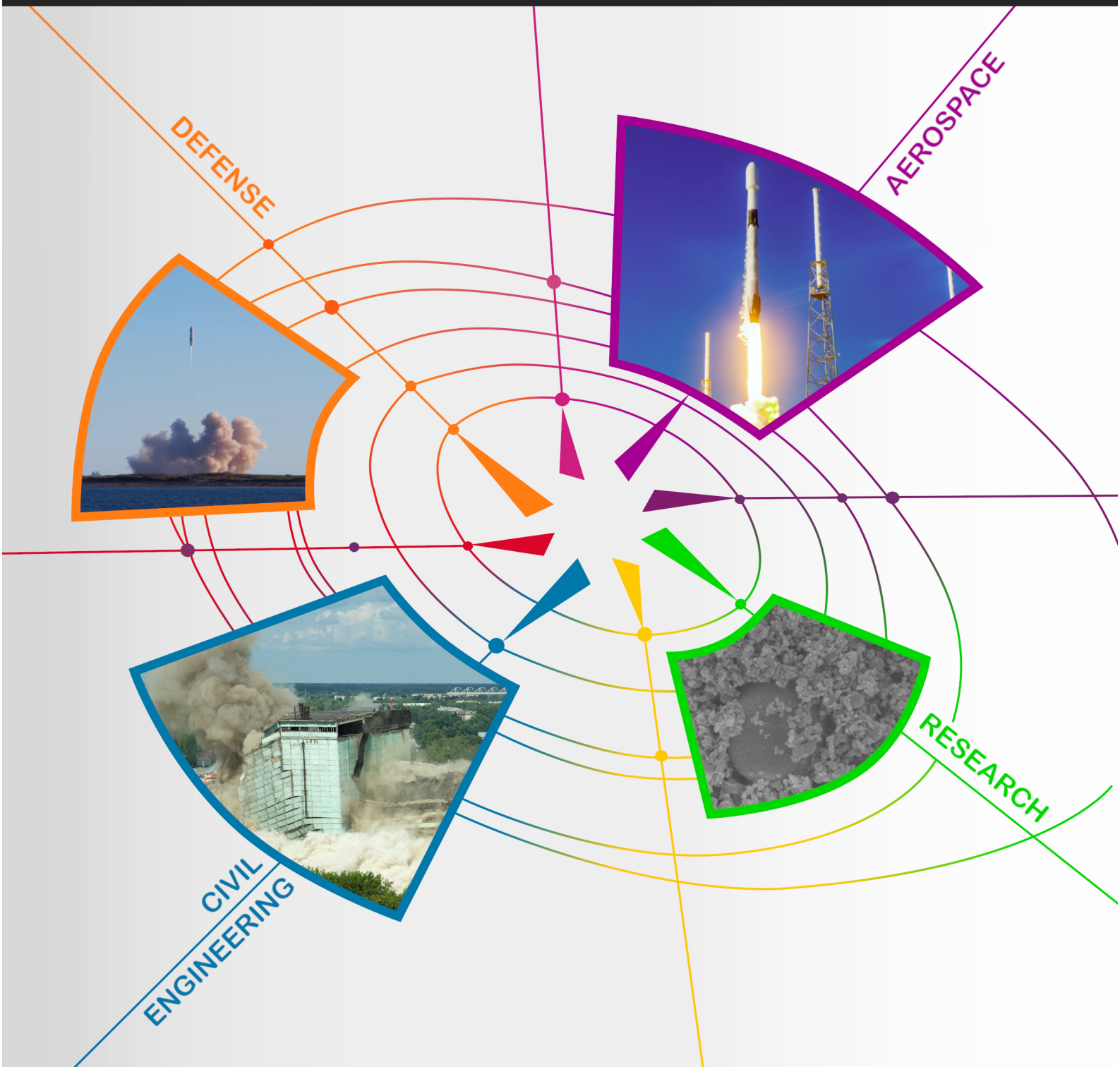
LFU

Laser Firing Unit



OH

Optical Harness



Next Generation Opto-Pyrotechnics

IDIL Fibres Optiques develops a new generation of systems and components for opto-pyrotechnics technology. A well-defined laser pulse is generated and transported within an optical fiber to be delivered on the target, i.e. an IOP (opto-pyro initiator) or a DOP (opto-pyro detonator) into launchers, thrusters, missiles or explosives.

A complete and safe opto-pyro system includes a Laser Firing Unit (LFU) emitting a NIR light pulse travelling through a ground Optical Harness (OH) to the target. Multiple stage Safety Barriers (SB) ensure the entire opto-pyro channel integrity.



SAFE MONITORING

LFU



IOP / DOP



LFU LASER FIRING UNIT

Multi-channels (modular slots)

3 modes



STAND-BY

Adjust your lasers parameters (duration, power). Wait for command from remote controller

TEST

Check the integrity of the opto-pyro line with a low power laser at a safe wavelength

ARMED

Turn on armed mode and fire after a successful test. Return to rest mode after each firing

Specification

Number of channels 1, 2 (more upon request)

Firing laser source (power and wavelength) 10W @940nm (more upon request)

Firing pulse power Tuning step 0.1W

Firing pulse duration Adjustable from 0.1 to 500ms

Line control source (power and wavelength) 2mW @1310nm

Interface for software remote control Ethernet

Dimensions 19" - 5U rack

Power supply 230V, 50-60Hz



Remote control

- System programming
- Ethernet RJ45 socket
- Calibration mode access (expert user)

Security

- Laser interlock
- Laser Safety Key on each channel
- Harness presence detection (See OH)
 - Innovative optical switch with optical barrier safety function
- No arming allowed without optical line test completed successfully
- Arming and firing from remote controller only

Multiple Stage Safety Barrier

SAFE MONITORING

- Remote control
- Successful test is needed to initiate firing
- Standard or expert user modes



MILITARY GRADE OPTICAL CONNECTORS

- Robust (2.5mm ceramic ferrule)
- Electrical contact to confirm connection to LFU
- Used as a standard on aircraft and military programs
- Seal integrated inside rear boot & bayonet locking mechanism

OPTICAL SAFETY BARRIER (OSB)

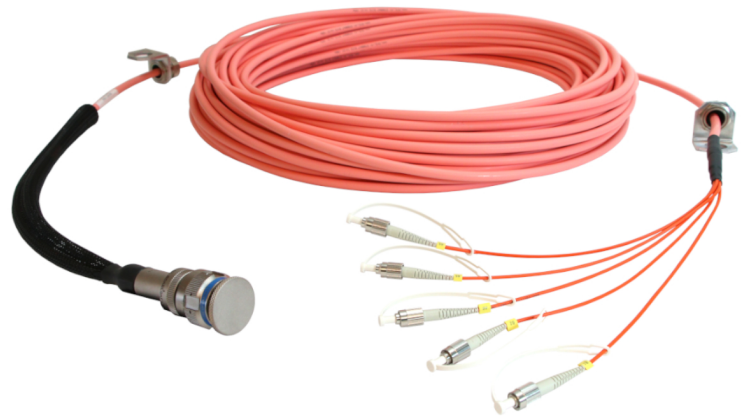
- The safe position of the optical switch ensures no light is exiting from the LFU to the optical harness



OH OPTICAL HARNESS

Single-Mode & Multimode optical fibers
Straight & Fan-out configurations

CONNECTOR LAYOUTS Easy to use, clean & connect!



No electronics, no electrical wires inside

- Easier handling
- Shorter integration time
- Mass reduction up to 50%
- Immune to EMI with excellent EMC
- Cost reduction (consumption, materials)

Specification

Number of fibers	1 up to 24
Fiber types	MM105/125 (specific design) More upon request
Low insertion loss	<4dB/km
Low bend loss	Operation ROC= 150mm
Length	Up to 1000m
Cable characteristics	OD= 5 to 11mm Outdoor use (moisture & UV resistant, LSZH, [-14,+65°C])
Configurations	Straight, fan-out
Connectors	Souriau D38 999 family with ELIO™ contacts, FC/PC, ST/PC, SC/PC, SMA Aerospace qualified versions available
Connector pinout	Upon customer's provided schematic



Fiber optics & Components



Lasers & Amplifiers



Optoelectronic systems



Fiber sensors



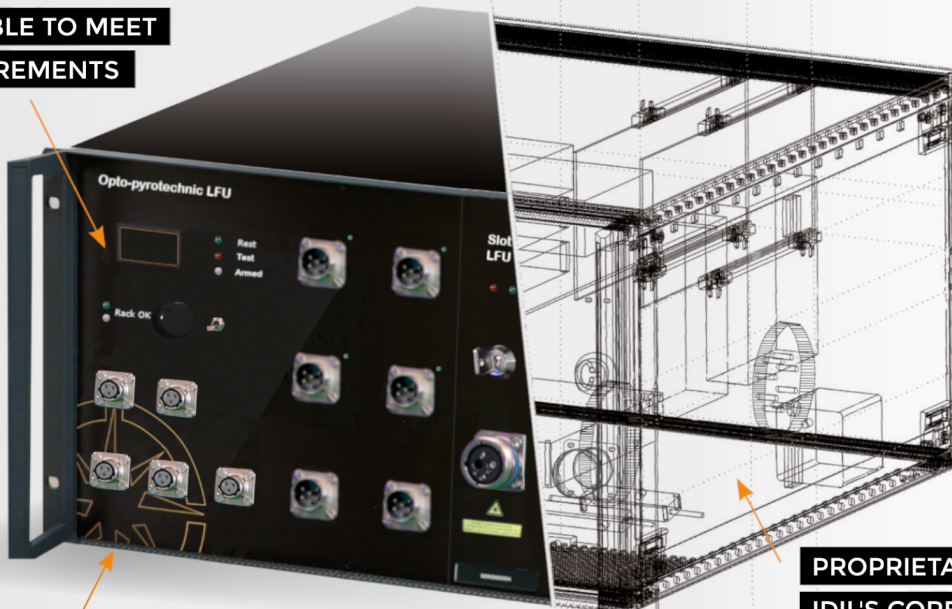
Spectroscopy & Microscopy



Education systems

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CUSTOMIZABLE TO MEET YOUR REQUIREMENTS



PROPRIETARY DESIGN WITH IDIL'S CORE TECHNOLOGIES

SAFE AND SECURE



**EXPERT USER
CALIBRATION MODE**

A personal password is required to access the calibration mode and prepare the firing sequence.

Most of the safety barriers are unlocked, except the mechanical ones: interlock, keys, harness presence, OSB. A firing command can be sent without prior line test.

The expert user is able to communicate with the LFU thanks to an HyperTerminal window or the supplied software.



**STANDARD USER
SOFTWARE REMOTE CONTROL MODE**

Laser duration & power can be remotely configured in a secure manner. Each of the 3 modes can then be sequentially activated until the final firing command.

Contact us to combine your opto-pyro system with other key accessories: NIR spectrometers, detection systems, smart lasers, fast active and passive optical components...

www.idil.fr

