

Instrumentación optoelectrónica para ensayos y monitorización

José A. García Souto
**Workshop: Aplicaciones de la luz en la
industria aeroespacial**

Optoelectronic Instrumentation for testing and monitoring

Fiber Optic Sensors /
Optical systems

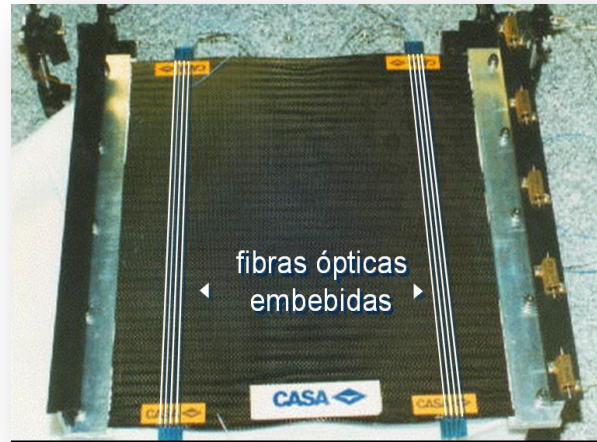
Novel Optical Sources

Fast Multi-channel
Instrumentation Systems

Demonstrators relevant to
aerospace industry

Optoelectronic Instrumentation for testing and monitoring

Fiber Optic Sensors /
Optical systems



JSTQE (2000)



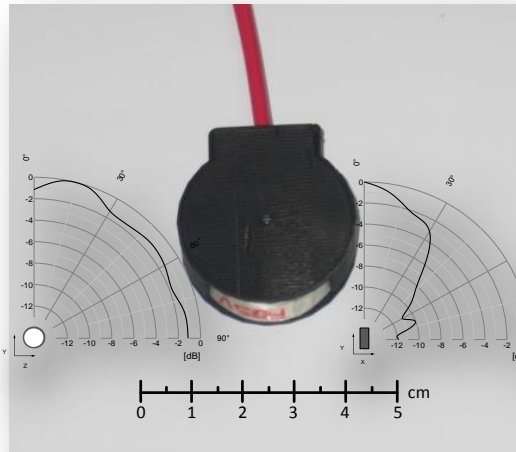
Sensors (2016)

SMF embedded in composite

FBG sensors (dynamic)

FO sensor of ultrasound AE

Non-contact / FO sensor of
vibrations (harsh-env.)



Sensors (2012)



OLE (2017)

Optoelectronic Instrumentation for testing and monitoring

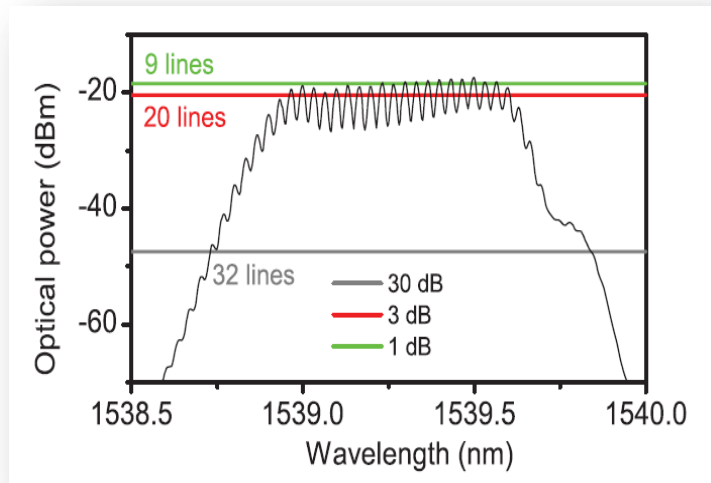
Diode lasers DFB, DM, VCSEL

Tunable lasers

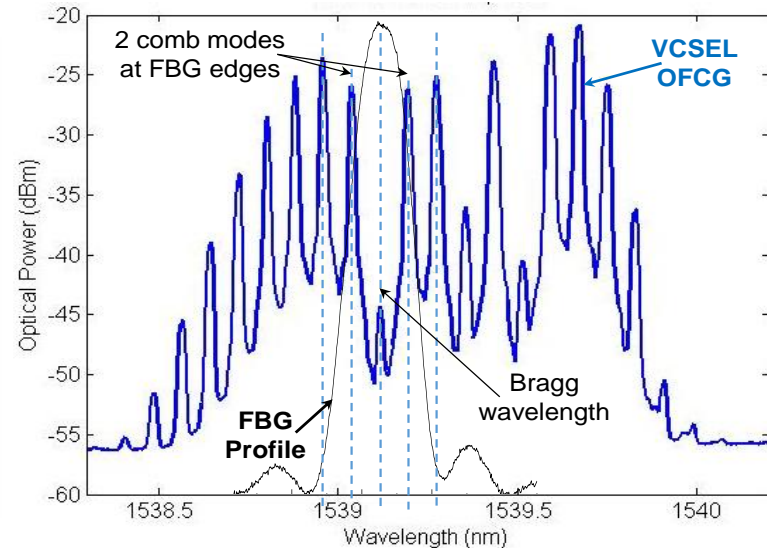
Photonic local oscillators

Optical Frequency Combs

Novel Optical Sources

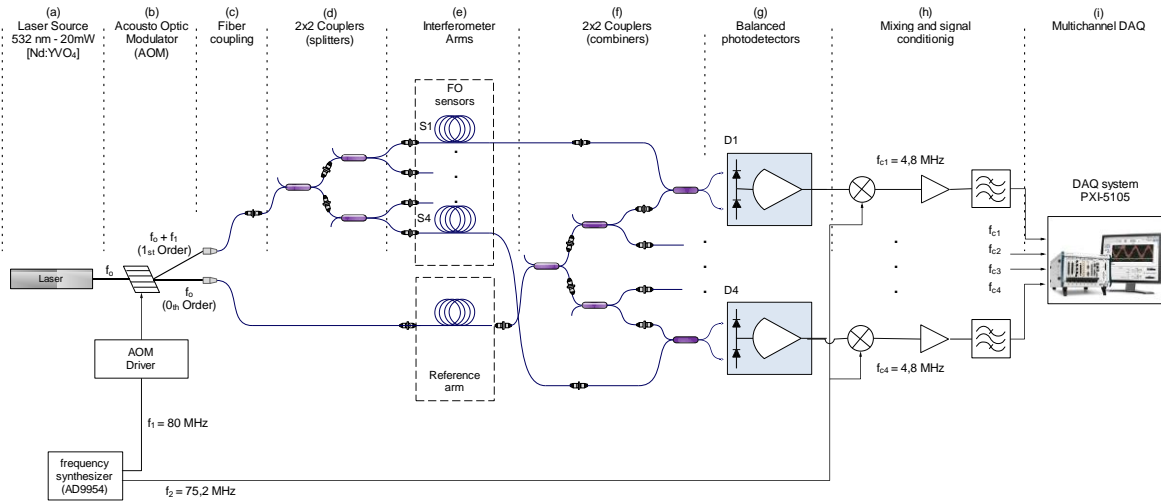


PTL (2013)



OFS (2017)

Optoelectronic Instrumentation for testing and monitoring

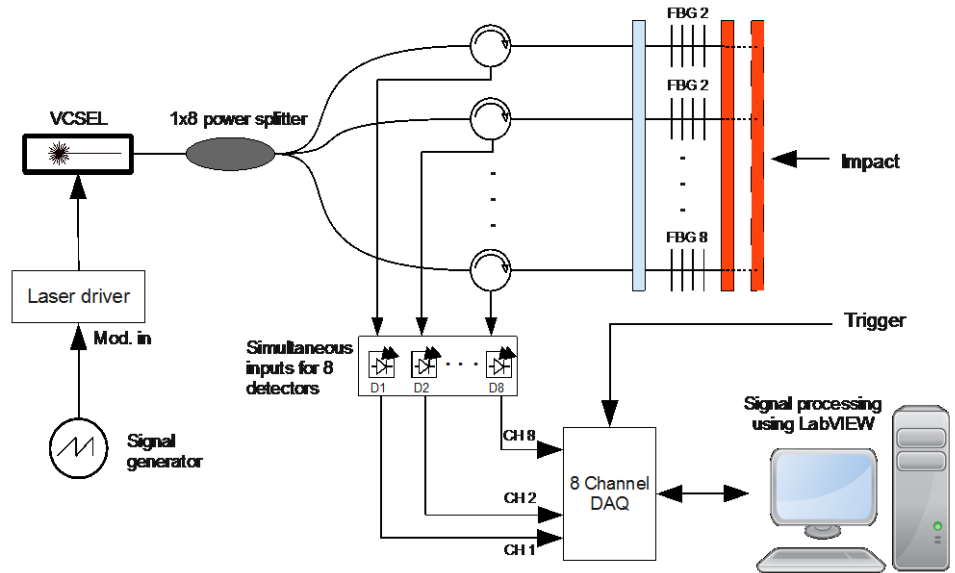


Fast multi-channel interferometric systems

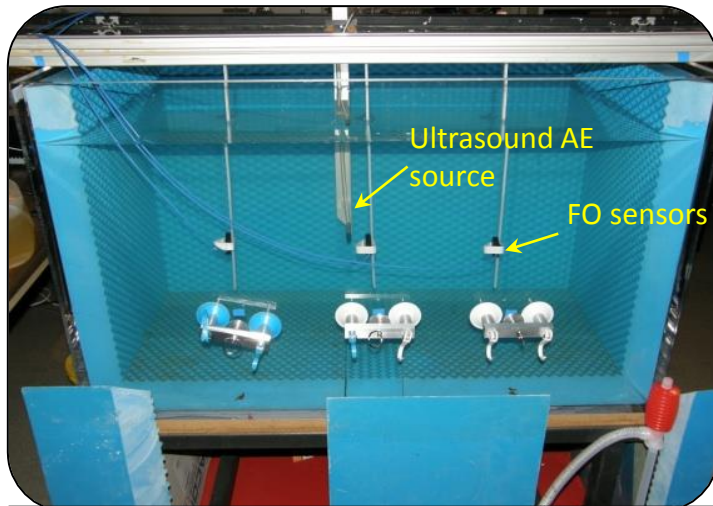
Fast multi-channel ADQ and signal processing

Parallel read-out of FBG

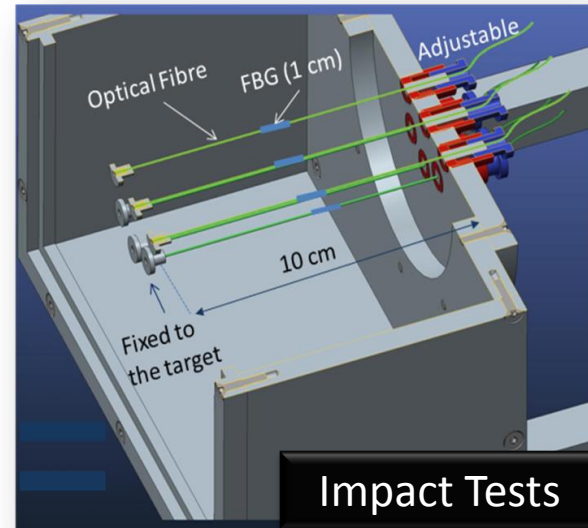
Fast Multi-channel Instrumentation Systems



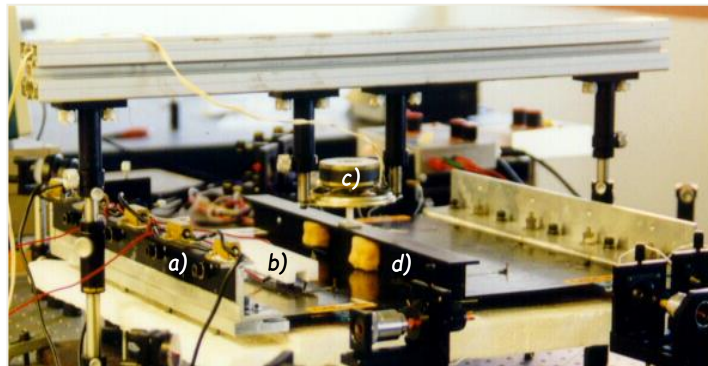
Optoelectronic Instrumentation for testing and monitoring



Ultrasound / Acoustic Emission



Impact Tests



Temperature / Strain / Vibrations

Demonstrators relevant to Aeronautical Industry

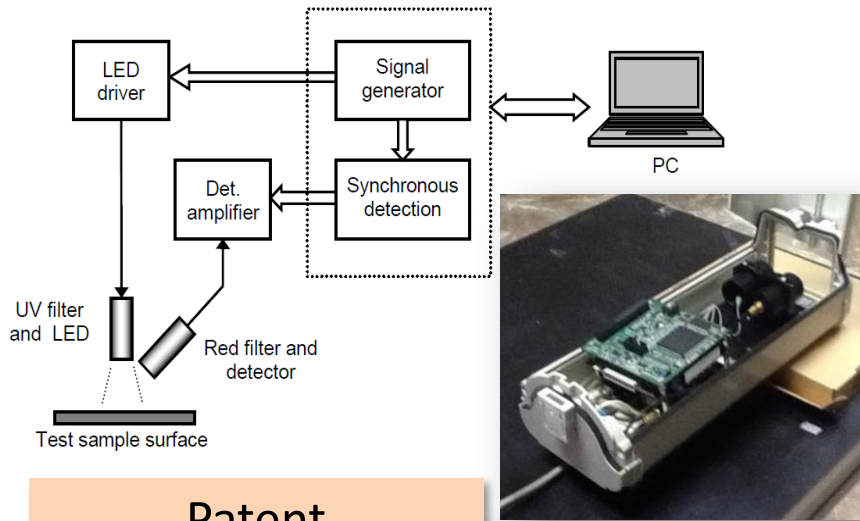
Projects: Fast non-contact optical monitoring of hypervelocity impacts on composite materials

Hypervelocity impacts in the Light Gas Gun

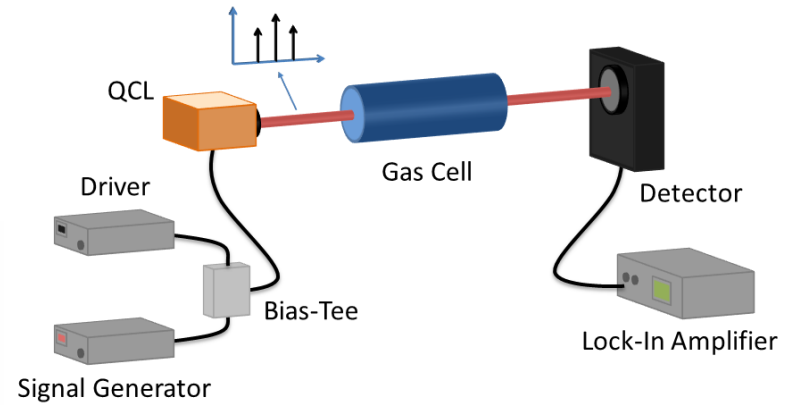


Ballistic Testing Laboratory at UC3M

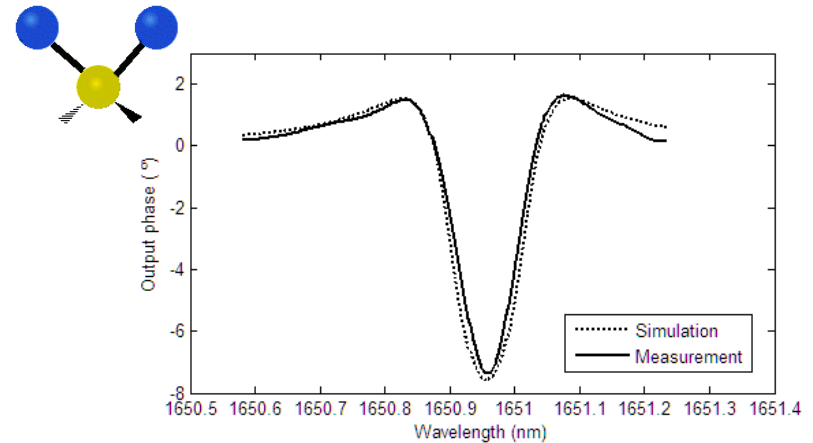
Projects: remote ice-salt-water detection / gas sensing



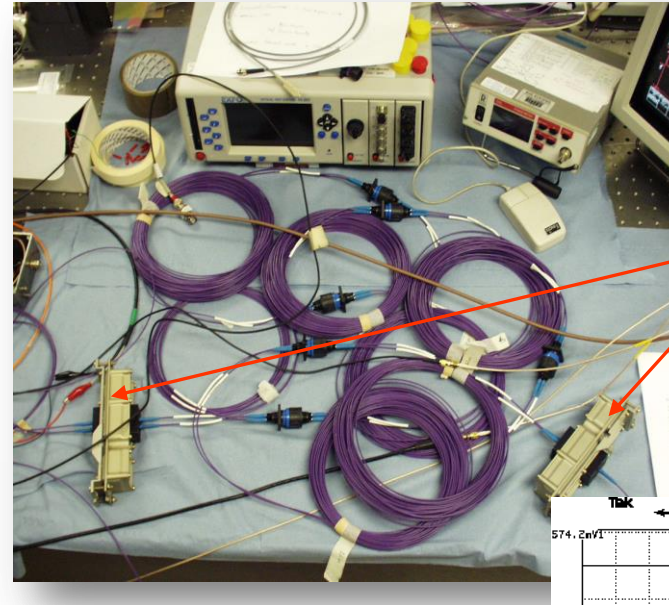
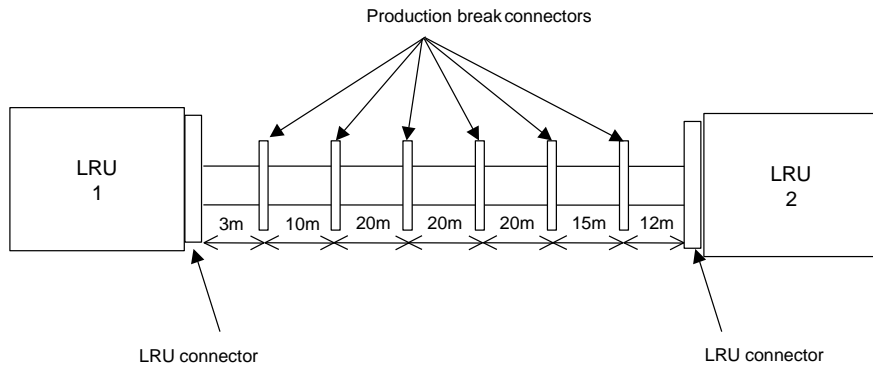
Patent



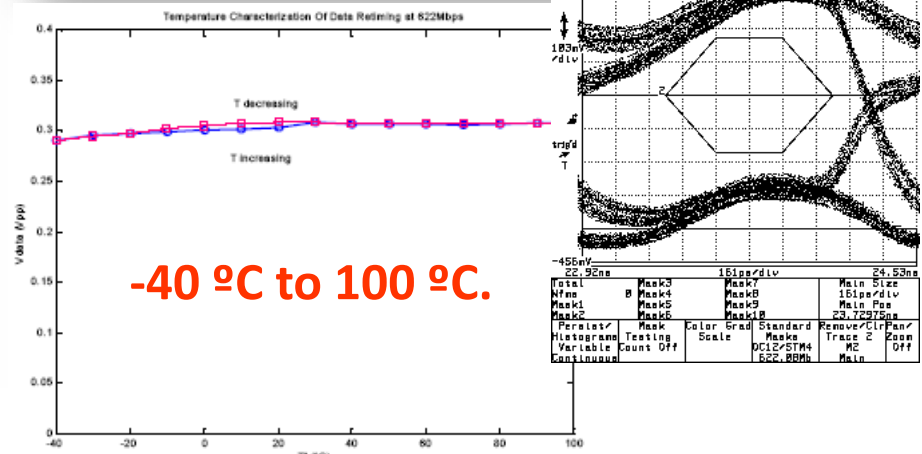
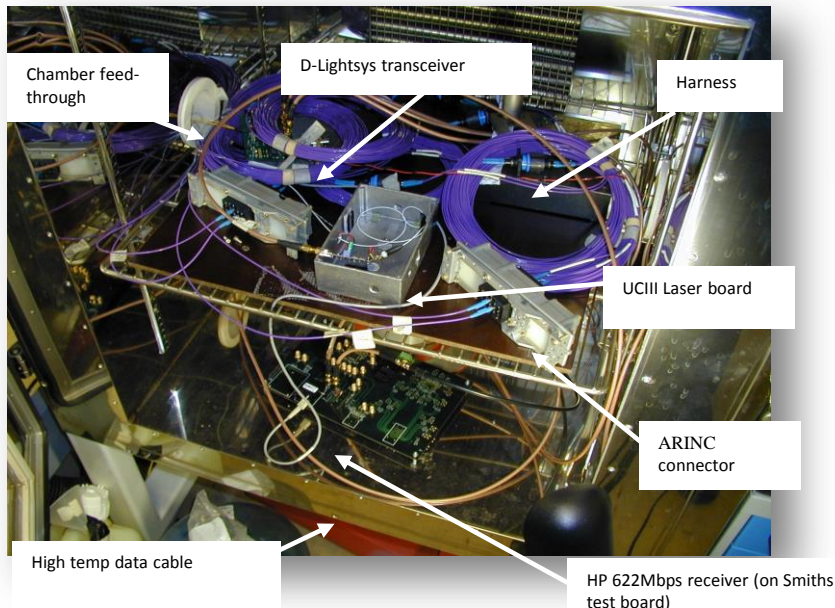
Remote sensing / satellite payload



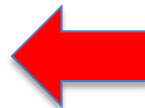
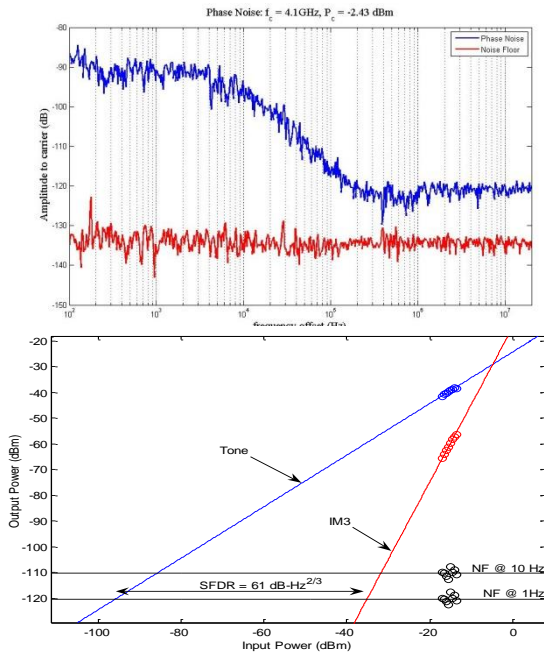
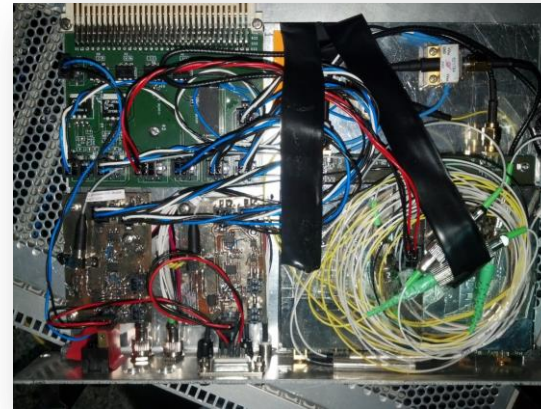
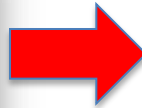
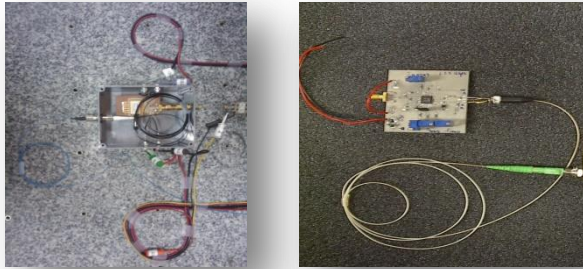
Projects: optical fiber data transmission in aeronautical environments



ARINC input/output connectors

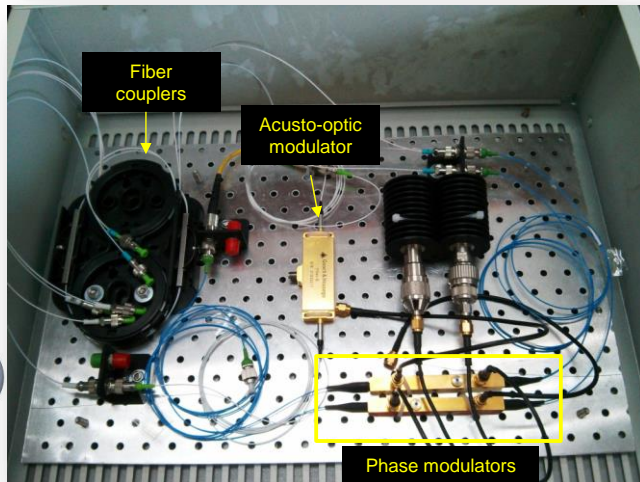


Projects: radio over fiber signal distribution



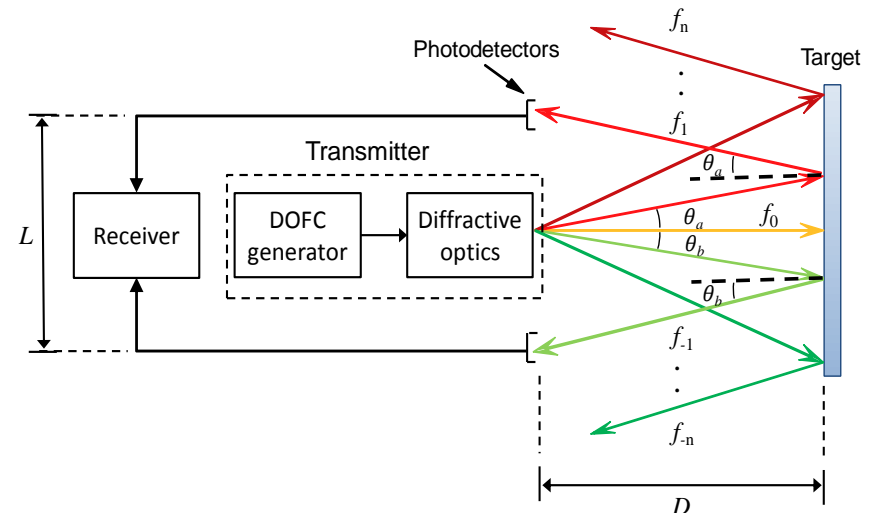
Projects: air to air refueling & UAV refueling (AIRBUS D&S)

DOFC Implementation



Patent: “Method and system for determining a relative position to a target”
 N° de solicitud: 15382230.9 – 1812
 Fecha de prioridad: 5 Mayo 2015
 Entidad titular: Airbus Defence and Space, S.A.U.

‘FEASIBILITY OF A PRECISE GUIDANCE SYSTEM FOR RECEIVERS AIRCRAFTS FOR AAR OPERATIONS, TAE-T-NT-140006’
 Contractor: **AIRBUS Defence and Space.**



Projects: Free Space Optical Communications

‘AOC-Airbone Terminal Demonstrator-Workpackage for second demo’
Contractor: **AIRBUS Defence and Space Optronics GmbH.**

Projects: Drone guidance, positioning and precision landing

‘Guidance based on Laser technologies for positioning in two axes (PO E8237806K)’
Contractor: **AIRBUS Defence and Space.**

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