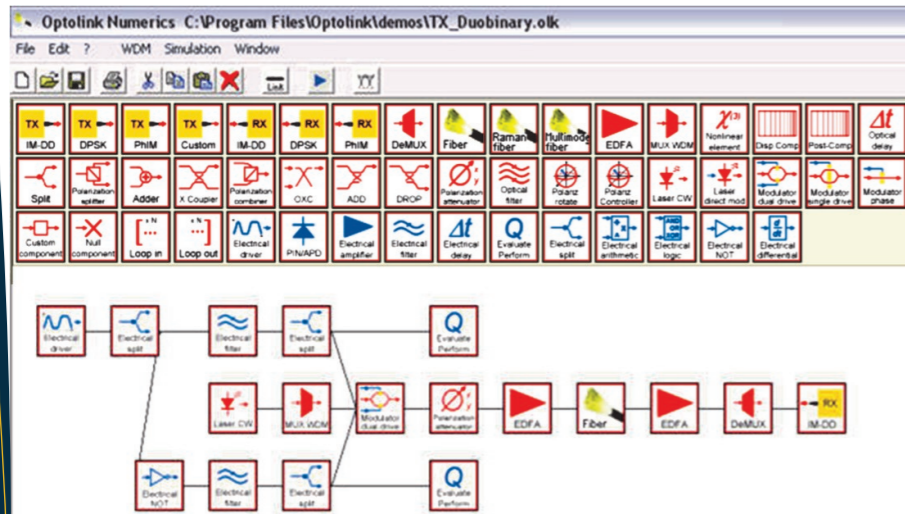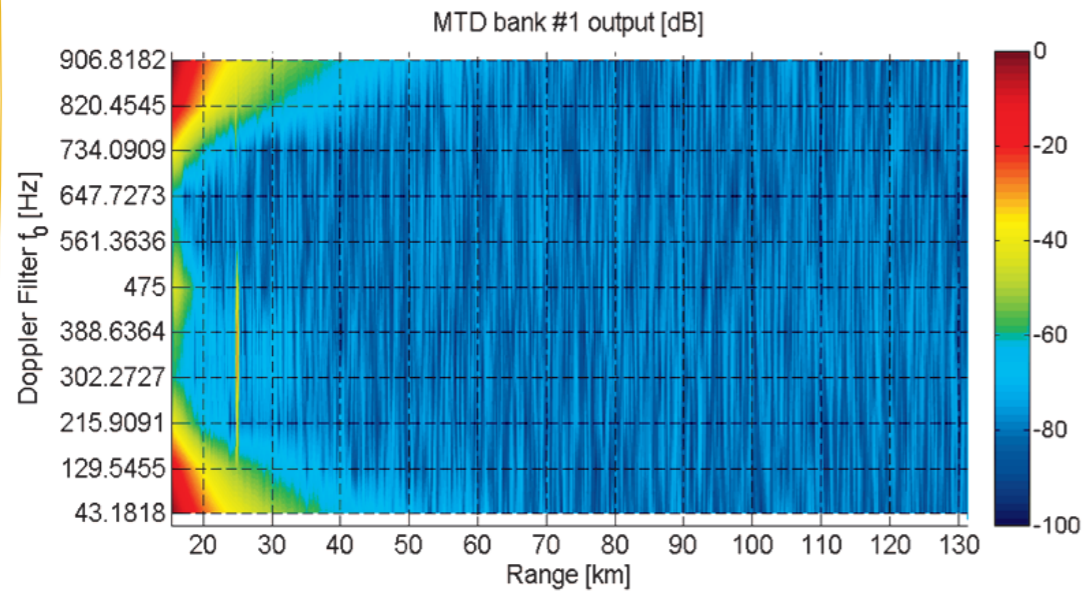Photoneco's proprietary software "Optolink Numerics",
for the modeling and design of Optical Core WDM Networks.
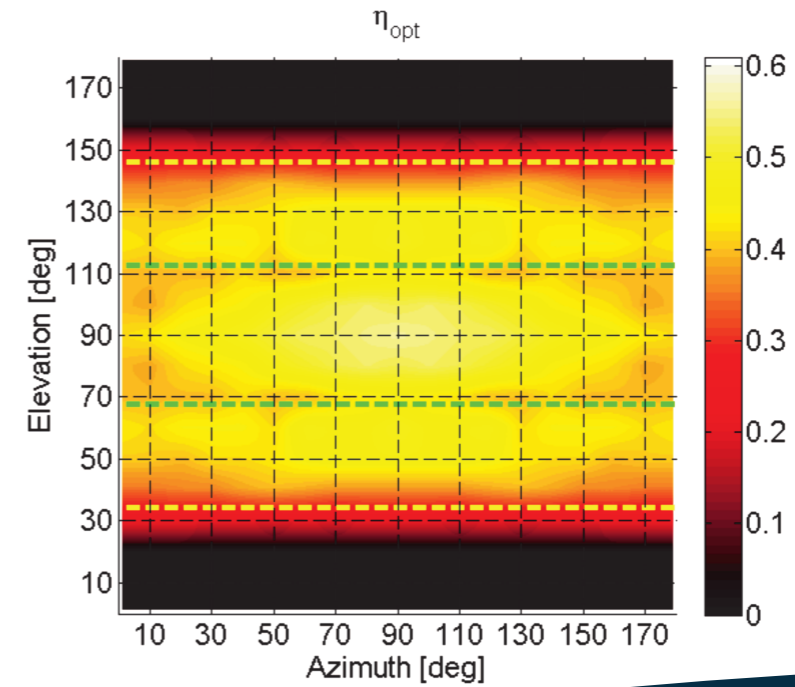

Photoneco's Moving Target Detector (MTD) output for a target
at 25 km range, 800 km/h speed, detected by a S-band Primary Radar.

PHOTONECO ®️ **LTD**

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In figure: optical efficiency vs. field-of-view of Photoneco's proprietary new generation
"EGC" Solar Concentrator, compared to common CPC (green dashed lines).

High-Tech solutions

ADDING HIGH VALUE TECHNOLOGY TO YOUR BUSINESS

Photoneco Ltd. is a R&D and consulting company registered in England.
It provides engineering and deployment of advanced photovoltaic systems, LED lighting and telecommunication networks. We offer consulting services, training/ learning and generation of high technology intellectual property in the fields of photonics, optical communications, lighting and photovoltaics.

Our expertise includes:
- o Design and deployment of last generation photovoltaic systems
- o Telecommunication networks modeling, design and deployment
- o Scientific Software design and development
- o Supply of low cost LED lighting systems for the home and the office
- o High-tech training/learning activity
- o Cisco-certified networking experience
- o Ph.D. level research, development and engineering services.

Photoneco's background ranges from advanced photonics and photovoltaics to large bandwidth optical telecommunications, from network architecture, design and planning to software development for the engineering.
Photoneco offers low cost, high-tech experts that are available to take on a whole the product development or to assist you in a particular phase of a project.

Network design/deployment

Photoneco networking activity is qualified by Cisco certification. Our expertise ranges from large bandwidth optical telecommunications to small and medium business networking.
Photoneco provides LAN, MAN and WAN modeling and design, and supports to design and implementation in the following fields:
- o Fast Ethernet, Gigabit Ethernet (GbE), 10/100-Gigabit Ethernet modeling, design and implementation
- o Structured cabling
- o SDH / PDH networks
- o WDM systems (Submarine and terrestrial, Ultra Long Haul, LH, SH, VSR) modeling and design
- o TCP/IP networking; infrastructure for TLC networks.

Our network engineers have carried out the following high-tech activities:
- o Design of proprietary new optical modulation formats for high speed core networks (Single-modulator RZ-DQPSK, PhIM)
- o Development of advanced optical transceivers for dense WDM systems
- o Design of a high-capacity long-haul optical telecommunication WDM system with channels modulated at 20 Gbit/s, 6000 km transmission, at QPlus Networks (Long Beach, CA)
- o Design of a fiber-based high-capacity 40 Gbit/s per channel, 80 channels WDM system (3.2 Tbit/s in C band) over 500 km distance
- o Design and operation of fiber test beds for measuring the performances of Santel Networks' electronic dispersion compensator (Fremont, CA)
- o Modeling and design of long-haul WDM 64x10 Gbit/s submarine optical communication systems at Pirelli Submarine Telecom Systems (Italy).

New generation Photovoltaics

Photoneco has developed new generation proprietary solar concentrator systems for commercial and high energy applications: the Extended-view Grin Concentrators (EGC), and the Hybrid Luminescent Solar Concentrators.

Main features of EGC concentrators are:
- o Concentration factors between 5 and 25
- o Achieve simultaneously high optical efficiency and acceptance solid angle
- o Based on low-cost optical polymers.

EGCs are particularly suitable for fixed, non-tracking photovoltaic applications, thanks to the extended acceptance angles and high average efficiency (see the front page picture).

Software development

Photoneco develops custom scientific and technical software for engineering companies. Our software production includes tools for the network design, photometric sensing, radar processing, electronic countermeasures.
We can assist in all phases of the software cycle, including specification, design, developments, and documentation. We have a deep know-how in software for designing and simulating complex optical systems.

We designed and developed software for the following high-tech applications:
- o Control and analysis software for wired/wireless communication systems at Pirelli (Italy), Santel Networks (Freemont, CA), QPlus Networks (Long Beach, CA)
- o Simulation software for opto-electronic countermeasure systems at Selex-ES (Italy)
- o Scientific software for the simulation and study of infrared imaging and free-space optics at Otomelara (Italy)
- o Scientific commercial software (Optolink Numerics) for the design and simulation of optical communication systems
- o Software for advanced elaboration of acoustic signals at Atmel (Italy)
- o Control and HMI software for new generation scientific and photometric instruments
- o Imaging and computer vision software for UAVs automated flight
- o Primary Radar (PR) signal processor and radar processor software at Azimut (Russian Federation).

Training/learning

Our training activity is carried on by Ph.D. level and Cisco-certified instructors. Training fields include:
- o Optics and opto-electronics
- o Photovoltaic and LED lighting systems
- o Telecommunication networks modeling and design
- o Radiometry and photometry.

INTELLECTUAL PROPERTY

Photoneco's portfolio includes international patents of photovoltaic systems, advanced optical transceivers, high speed fiber transmission systems, photometric sensors.

Photoneco provides customers with the generation of intellectual property suitable for patent applications.

CONTACTS

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