VERTIGO

Versatile two micron light source

Project reference: 034692, STREP

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Timeline
Start Date: 1 June 2006
End Date: 31 May 2009

Budget
Overall Cost: 3.22 million €
Funding: 1.90 million €

Project Partners
- FRAUNHOFER GESELLSCHAFT ZUR FOERDERUNG DER ANGEWANDTEN FORSCHUNG E.V., DE
- ALCATEL THALES III V LAB, FR
- UNIVERSITY OF STRATHCLYDE, GB
- INSTYTUT TECHNOLOGII ELEKTRONOWEJ, PL
- CABLEFREE SOLUTIONS LIMITED, UK
- LISA LASER PRODUCTS OHG, DE

Vision & Aim

The VERTIGO project is focused on the development of compact, high performance Optically Pumped Semiconductor Disk Lasers (OPSDLs) emitting in the 2.0-2.5µm wavelength regime.

The OPSDL concept combines the high efficiency and wavelength versatility of more traditional semiconductor lasers, but introduces the circular, high quality beam and resonator versatility more associated with solid-state lasers. In this project, the (AlGaIn)(AsSb) material system will be exploited to access the 2.0-2.5µm regime with a view to satisfy the demand of high performance lasers in this range.

The project combines the design and development of the laser sources with the necessary steps for specific applications implementation and eventual exploitation. The multi-partner consortium, comprising of two non-university government funded research institutes, one university research group, one industrial research laboratory, and two SMEs, has been carefully selected to accommodate all aspects of device development and its potential route to market.

We believe that these novel laser sources represent a new and versatile photonic component, suitable to serve a variety of needs expressed in the IST call. The most notable impact areas of VERTIGO technology will be in:

1. Communication: e.g. high-speed, free space optical communications.

2. Environment: e.g. highly sensitive gas detection and monitoring of enviro-chemical compounds, and precise data collation for global climatic modeling, and natural disaster prediction.

3. Security: e.g. sensitive chemical and explosives sensing as homeland security measures and, stand-off turbulence detection in aviation.

4. Healthcare: e.g. sensitive non-invasive, diagnostic devices and high-throughput medical screening technologies.

The key to the success of the VERTIGO development will be to address both, the flexible, high performance nature of these novel laser sources, but also, the important issues of standardization and cost effectiveness.