

# PROCEEDINGS OF SPIE

## ***Technologies for Optical Countermeasures VII***

**David H. Titterton**  
**Mark A. Richardson**  
*Editors*

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1 Countermeasure Sources I

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**Hans Dieter Tholl**, Diehl BGT Defence GmbH & Co. KG (Germany)

## Introduction

The purpose of this conference was to provide a technical forum for the discussion and dissemination of information on optical, electro-optical, and infrared technologies as applied to the countermeasure role in security and defence. This was the seventh conference in the series for the Security & Defence Symposium.

Since the polished shields of antiquity that were used to reflect the sun into the enemy's eyes over two millennia ago, optics and optical systems have been used on the battlefield as a cost-effective countermeasure; a classical force multiplier. The simplest modern optical countermeasure techniques can still be extremely inexpensive in comparison with the platform/weapon system that they protect. Take for example, the humble infrared flare ejected from the multi-million dollar aircraft, and the smoke screen deployed to protect an armoured fighting vehicle or column of vehicles. More sophisticated defensive aid systems are being developed that can encompass sensor systems, tracking systems, active and passive countermeasures, and sophisticated control and processing systems. It was all of these techniques and their underlying technologies, from the simple to the complex, which this conference aimed to discuss.

The conference content was similar to last year, with 28 high-quality papers being presented over the last two days of the symposium. Interest and attendance were high throughout; the sizeable conference room was usually full, with some people having to stand for some of the sessions, especially for the extended keynote session and during the invited papers. The importance of the laser source in various approaches to countermeasure techniques and was evident by the fact that a number of the sessions were focused on laser technology in countermeasure systems; most appropriate in this jubilee year for the laser. Additionally, there were sessions on supporting technology and a general session on modelling and simulation.

The conference theme was started with an excellent keynote address session, which provided an excellent overview of the challenges for laser technology. The first paper reported on the recent successes of high-energy laser projects such as the airborne laser from the U.S. Department of Defense and the projects sponsored by the High-Energy Laser Joint Technology Office in the USA. A most interesting presentation was given on the recent developments with quantum cascade laser technology and the vast range of applications to which it is being applied in the security and defence arena. The final keynote address emphasised that the laser is the foundation for infrared countermeasure systems to protect all platforms.

Most of the seven sessions typically started off with an invited paper, followed by two or three contributing papers. All of the papers were well received and created significant interest and subsequent questioning.

We therefore commend the following papers to your attention and invite you to advance the topic of Technologies for Optical Countermeasures even further, by submitting your research and development work for consideration in next year's conference in Prague (The Czech Republic).

**David H. Titterton**  
**Mark A. Richardson**