

VeroTect

Enhanced Biodetection Sensor

The ideal biological warfare agent detector would provide real-time identification of all known threat agents in a compact package that required no consumables and minimal operator intervention. Unfortunately current and emerging technologies do not allow us to solve this complex problem in a single instrument. However, recent advances allow the development of aerosol instruments offering real-time operation without consumables but with the capability of generically detecting biological agents.

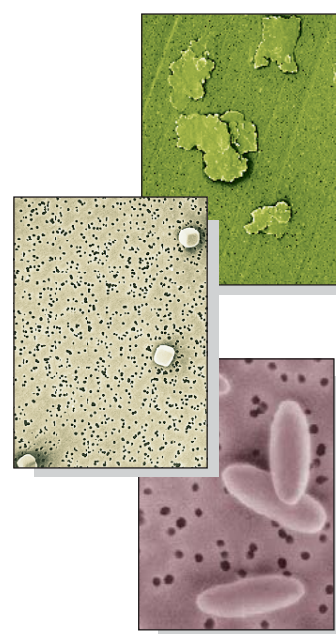
The new VeroTect has been developed by Biral to take advantage of new technology developed by DSTL, Porton Down and the University of Hertfordshire. The VeroTect has been developed from the ASAS family of biodetectors used by the UK armed forces. The instrument analyses single aerosol particles using light scattering techniques to determine aerosol concentration, size and asymmetry distributions whilst particle fluorescence is measured on a bulk sample of aerosol. The two measurements are time resolved to provide more information on the analysed aerosol than is available from any other commercially available single instrument.

The majority of aerosol instruments that use fluorescence techniques employ laser sources with wavelengths of 355 nm or greater to excite the sample. These wavelengths do not excite the most strongly fluorescing molecules in biological agents and in some cases produce little or no measurable fluorescence. VeroTect uses a novel light-source centred on 280 nm that causes fluorescence in bacteria, viruses and toxins. The use of multiple detection channels allows greater discrimination between biological agents and common interferents.

Recognising that different customers have different needs the VeroTect has been designed in a modular manner allowing the system to be customised for use in many systems and environments. The modular approach also reduces development time and improves customer support as common modules are used across a range of instruments.

Although developed from technology used in biological warfare agent detection the VeroTect also has applications in research and industry.

The VeroTect is part of a proposed solution for the MoD's Integrated Sensor Management System (ISMS) which is a networked suite of sensors designed to provide timely detection and identification of Chemical, Biological, Radiological or Nuclear (CBRN) threats. The sensor outputs would be correlated and reported to a high level control centre for the commander to make a balanced assessment of the probability of an attack with a high confidence level. The use of multiple sensors, sophisticated network techniques and analysis software would provide a greater level of confidence than is possible when looking at individual detector outputs.



VeroTect
characterises particle:

- Size
- Shape
- Florescence
- Concentration

VeroTect

continued

Working in partnership with Serco Assurance, who are one of the two competing parties during the initial Assessment Phase of the project, Biral has offered the VeroTect as the biodetection sensor solution for ISMS. VeroTect was chosen ahead of stiff competition following a study of candidate technology solutions. The choice of Biral's sensor is a positive endorsement of the qualities and innovative features of VeroTect, which is the only sensor on the market to combine the US detection philosophy of *size, fluorescence and concentration*

characterisation with the UK developed method of *size, shape and concentration*. This unique combination results in a real-time sensor with near generic capability. The objective of the ISMS Assessment Phase is to demonstrate a Proof of Principle Prototype and the winning solution will then be introduced into service at the end of the resulting development and manufacturing phase of the project.

Successful trials and a formal customer demonstration have been carried out

and the winning team will be formally confirmed in January 2005. If you would like to learn more about VeroTect please email Steve via email: sevans@biral.com or tel: +44 (0)1275 847 787



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