

# Integration ... thinking outside of the analyser

EQUIPMENT SUPPLIED BY:  
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**RoadBOX**  
Compact Air Quality Monitoring System

*Integration. It's the 2007 buzz word when it comes to the subject of air quality monitoring. When it comes to getting more out of your current air quality monitoring systems, Duncan Mounsor of Enviro Technology Services Plc believes 'intelligent system integration' is the way forward.*

*Having spent the last 24 years working with both public and private sector clients, air quality monitoring specialists, Enviro Technology, have seen their fair share of changes. But never as much as in the last few years. Here Duncan shares his thoughts on the way forward, and highlights some of what he sees as the key products for air quality monitoring in 2007.*

When it comes to intelligent, sophisticated AQ monitoring, integration really is key. We work across the board in terms of type of client, but the common theme is the same. Every one of our customers – whether public or private – are looking for a truly integrated approach when it comes to AQ monitoring.

Clients are looking for turnkey packages and, more often than not, are looking to work with a company that can provide them with the complete solution. A one-stop-service that can provide everything, from a stand-alone analyser to intelligent software that can take statistics and data from one, or many, analysers, and turn this data into information either for internal and/or public use.

As a company we have always been well-known for our traditional static AQ station offering - stations that incorporated analysers measuring several gasses. Many customers initially came to us when looking for a central fixed AQ station that would measure compounds such as NO<sub>x</sub>, SO<sub>2</sub>, CO, O<sub>3</sub> and particulates. But, as our customers have found, there is so much more...

What happens when, rather than just at one location, another problem area rears its head? Your central station may be measuring at one point (the more traditional form of AQ monitoring) but you need information from one, or a few, others. Buying more large static stations can be expensive. So what is the remedy? Could building a RoadBOX network be the answer?

## **A COMPACT, HASSLE-FREE OPTION**

RoadBOX is a new addition to the Enviro Technology portfolio. It's the perfect solution for those clients looking to expand their monitoring network with minimum expense and hassle. RoadBOX is a compact, self-contained solution for roadside, kerbside and fenceline AQ monitoring applications. The Enviro Technology RoadBOX has been designed

to take up the very least amount of space in-situ and be as unobtrusive as possible. Due to its compact size, planning permission, which can sometimes be a lengthy procedure, may not be required for this system. RoadBOX can monitor from one to four pollutants, e.g. NO<sub>x</sub>, PM<sup>10</sup>, SO<sub>2</sub>, O<sub>3</sub> or CO.

So, in theory, you now have your central monitoring station and a network of RoadBOX systems all measuring single points. Fine, but what if you're looking for a more representative sample? Many of our local authority clients are looking at street canyon monitoring of NO<sub>2</sub>. Industry clients are looking to monitor at site boundaries, maybe from fenceline to fenceline. Both clients, although looking at different applications, are in need of the same monitoring system. For them the OPSIS Open Path Monitoring System is the ONLY answer.

## **A MORE REPRESENTATIVE SAMPLE**

Open Path Monitoring uses a transmitter and a receiver to measure compounds between 200 – 1000m distances, therefore giving customers a more representative air quality measurement. The system works using an optical light path to measure stated gases. OPSIS uses DOAS (Differential Optical Absorption Spectroscopy) to measure these gases. How? A Xenon lamp transmits visible light from the transmitter to the receiver and gasses such as NO<sub>2</sub>, SO<sub>2</sub>, O<sub>3</sub>, Benzene and Formaldehyde absorb into the UV part of the light spectrum and are measured from there. The fantastic thing about OPSIS is that a higher amount of multiple gasses (up to ten or more) can be measured using just one OPSIS Open Path Analyser. The OPSIS System 300 was in fact the first ambient AQ system to



*With a proven EU equivalency, the BAM1020 is a rugged, reliable system for the measurement of PM<sup>10</sup>, PM<sup>2.5</sup> and TSP.*

receive MCERTS approval for the measurement of multiple gasses including SO<sub>2</sub>, NO<sub>2</sub>, O<sub>3</sub> and Benzene (C<sub>6</sub>H<sub>6</sub>).

## **60-DAY NO USER INVOLVEMENT FOR PARTICULATES**

Particulate monitoring and sampling is another major area of concern for both public and private clients and, again, Enviro Technology have many systems on offer to make this process simpler, one of them being the BAM1020 Dust Monitor. The monitor automatically measures and records the concentration of airborne particulate matter, in real-time, using the field-proven beta attenuation technique. Offering 60-day operation without user



*The new ET RoadBOX provides the perfect solution for roadside, kerbside and fenceline AQ monitoring*



involvement, the monitor has a proven EU equivalency and provides the customer with a reliable, rugged and flexible system for the measurement of PM<sup>10</sup>, PM<sup>2.5</sup> and TSP. The word 'integration' comes into play again, as the BAM1020 can be used as either stand-alone or can be incorporated into the aforementioned RoadBOX system.

### BRINGING IT ALL TOGETHER...

Whether you have one, or many, AQ monitoring systems running at a number of sites, what use are they if they are not giving you the statistics and data that you require, WHEN you want it and HOW you want it? No use at all. This is where a company like Enviro Technology really comes into its own.

While data collection and statistical analysis is an obvious requirement for both private and public clients, Enviro Technology can take it to the next level. Not only can Enviro Technology provide the software for the collection and analysis of data – Envicom, but we can also take that information and output it to our innovative, forward-thinking air quality website service [www.airqualitydata.com](http://www.airqualitydata.com) (AQD.com).

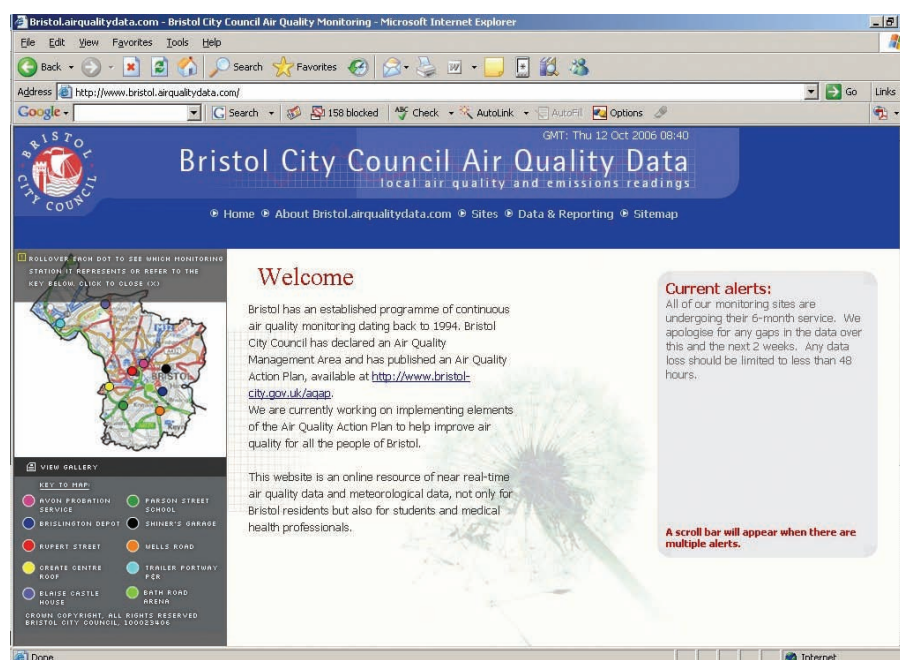
AQD.com is a must-see for those organisations looking to add air quality data to their existing corporate websites. It's an intelligent public display and information system. The site features air quality pages that can be used by everyone, from environmental experts to the general public. Based on Enviro Technology's unique template, AQD.com, a content-managed website, can provide information from one, or many, monitoring stations. The design of air quality pages can not only fit in with the design of your existing corporate website, but will actively boost traffic, thus increasing your organisations profile whilst demonstrating a commitment to providing the public with meaningful air quality information.

At Enviro Technology we believe in complete system integration. As well as the aforementioned products we can also add meteorological stations, measuring weather and atmosphere, to your system. The software can also support peripheral products, such as traffic counters, variable message signs and, of course, the internet. Thus bringing your whole air quality package together.

We believe that today's customer is looking for a company that can offer long-



An OPSIS Open Path Monitoring station measures gasses across a light path from a roof top in Milan, Italy



Airqualitydata.com – Enviro Technology's intelligent, content-managed, public display and information system.

term strategies to combat the air pollution issues they have. With a complete portfolio of air quality monitoring services available - from site survey, analyser installation and management, training and service options,

to providing the software to 'turn data into information - total intelligent system integration is an immediate, cost-effective option for those that want it. Now, that's the future!

### AUTHOR DETAILS

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## New Compact Ambient Air Monitoring System



**Recordum** (Austria) announce the launch of a new concept in air quality monitoring for pollutant gases such as Nitrogen Oxides, Sulphur Dioxide, Carbon Monoxide and Ozone, the airpointer™.

The system is based on the same monitoring technology as the current reference monitors, e.g. chemiluminescence, UV photometry and fluorescence and infra red absorption so the performance of the system is similar to more conventional designs. Measuring only 800mm high by 600mm wide and 500mm deep the airpointer is an alternative to large "walk in" designs offering similar performance but with none of the problems of location, high power requirements, planning consent or aesthetics.

airpointer™ also changes the way in which air quality stations communicate their results back to base by using the internet and fast connections which are "always on" to send data back in real time rather than by dial up modem links. There is no special software required either, just a web browser, which allows the user to communicate directly with airpointers™ in the field and even to control the system from the comfort of your office. airpointer™ does this using its inbuilt computer processor which as well as running monitoring functions, also acts as a web server and a communications management system. Data is logged on-board on a hard drive with enough memory for several years' storage. It is then transferred automatically or on demand using fast wireless broadband or GPRS connections to a nominated central PC where it can be quality assured and disseminated back to the public via a website or public display system. In the unlikely event of a fault occurring, the system can immediately email or SMS text a message to the client and the Air Monitors service department assuring a swift and targeted response leading to maximum data capture and high quality data. The system can also issue automatic pollution alerts if any one of the monitored gases exceeds a preset limit value.

Airpointer uses less power than conventional monitoring systems (~350W @ 230V) and is also very quiet in operation (making it ideal for use in residential areas). It is also fully air conditioned and can be used in temperatures from -20°C =to +40°C.