

## **Monitor - ISSN 1472-0221**

The Newsletter for PC-Based Data Acquisition and Control  
Issue 221, January 2017

Welcome to this year's first edition of Monitor, the data acquisition and control newsletter. Thanks for subscribing. Don't forget that you can download our measurement software, ComDebug, from <http://www.windmill.co.uk/jsarrpsrr.htm>

You can download Monitor as a pdf file from <http://www.windmill.co.uk/monitor/monitor221.pdf>.



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### **Smart City Sensors enhance Services and Understanding**

Web link: <http://www.windmill.co.uk/smart-city-sensors.html>

Smart Cities have the power to provide data about what's going on in a number of unprecedented ways.

#### **What is a Smart City?**

A Smart City installs sensors which can share information with the public, businesses, city managers and other sensor systems. The city connects its sensors and services via the Internet of Things (IoT). The different sensor systems store their information in a common data warehouse to make it available to those who need it.



## How Sensors help make Cities Better Places to Live

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To effectively serve people it helps, for example, if the city authorities know how many people are going where and when. The flow of pedestrians affects the whole city environment. It is important to know not just the numbers of people but also how the numbers change over time.

An accurate people metering system provides feedback on changes in people's behaviour within the city and allows the council to effectively manage the flow of people, vehicles and bicycles around the area. This is also known as *Smart Mobility*.

### Urban Sensing

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Using CCTV cameras and video analytics to anonymously detect people (so the system knows a person walked down a street but doesn't know who that person is) is one example of smart city sensors in action. The people, bicycle and vehicle counts are uploaded over the internet to "Brokers". The Brokers process the data and makes it available to all end users - comprising an Internet of Things.

### Sensing Pedestrians

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In the high streets and city centres, [Pi VT Smart Counters](#) are counting people. They provides both real-time and historical data for "Big Data" analytics.

They can also be used within individual retail units to discover vital business information like sales conversion rate, average queuing time and the most popular area of a store.

Outside, the Smart Counters are attached to lampposts around the city.

### Sensing Bicycles

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The Smart Counter can also be used to count bicycles. This helps monitor and support the promotion of healthy travelling and gives a measure of how green or pollution-free areas are within a city centre.



### Sensing Vehicles

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Smart Counters accurately count cars down roads and at junctions. Councils can effectively manage the flow of traffic along the busiest routes across the city and monitor the days and times of the heaviest congestion.

## Combining the Counts and Scoring Effectiveness of Smart City Projects

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The Internet-of-Things data provided helps quantify the use of footpaths and cycle ways. It shows the use of roads, including commuter routes around schools and major routes through the city centre. This can help score the effectiveness of Smart City projects such as [City Verve](#), which aims to build and deliver a smarter, more connected Manchester in the UK.

From a health perspective the Pi VT Smart Counter provides Smart City data to monitor the effectiveness of sports activity, events and jogging routes within parks.

### Counting on Public Transport

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The Smart Counters are not just being used around the city streets. Buses, trains and trams can also benefit.

### Sensing Passengers on Buses

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Transport authorities can know the numbers of people arriving by bus at various points in the city, by time of day. The data helps revenue protection – reconciling tickets bought with passenger numbers. It also enables effective fleet bus management with services around the city centre. With real-time GPS location of buses, it gives a clear picture of what is going on.

### Sensing the users of Trains and Trams

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Monitoring the numbers of people arriving on platforms again provides vital information on the use of routes by time of day.



## The Smart Cities of the not-too-distant Future

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We've given a taste of just a few of the benefits of the Smart City, giving cutting-edge connectivity to sensors and devices, and the IoT.

The data is there for whoever needs or wants it. Enabling clever solutions to urban problems.

For more information contact [sales@windmill.co.uk](mailto:sales@windmill.co.uk).



## Measurement and Control Exhibitions

The quarterly update of measurement and control exhibitions and conferences around the world.

### **Expo Control**

28 February - 2 March 2017

Moscow Russia

Technologies and decisions for quality assurance, measurement and testing.

[expo-control.com/en](http://expo-control.com/en)

### **Pittcon**

5-9 March 2017

Chicago USA

Showcase for scientific and technical innovation with a singular focus on laboratory science.

[pittcon.org](http://pittcon.org)

### **Automaticon**

14-17 March 2017

Poland

Trade fair for automation, control, measurement and robotics

[automaticon.pl/en](http://automaticon.pl/en)

### **ArabLab Expo**

20-23 March 2017

Dubai UAE

Featuring laboratory technology, measurement & testing, instrumentation robotics and automation.

[arablab.com](http://arablab.com)

### **Date**

27-31 March 2017

Lausanne Switzerland

Electronic design, automation and test event.

[date-conference.com](http://date-conference.com)

### **FORUMESURE**

27-29 March 2017

Nantes France

Exhibition on quality, measurement, accreditation and instrumentation

[forumesure.com/en](http://forumesure.com/en)

### **Eurolab**

29-31 March 2017

Warsaw Poland

International trade fair of analytical, measurement and control technology.

[forumesure.com/en](http://forumesure.com/en)

### **Internet of Things World Europe**

13-15 June 2017

London UK

Includes IoT architecture, data and analytics, manufacturing, energy, environment, smart cities and transportation,

[knect365.com/iot-world-europe/](http://knect365.com/iot-world-europe/)

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## DAQ News Round-up

Welcome to our round-up of the data acquisition and control news. If you would like to receive more timely DAQ news updates then follow us on [Twitter](#) - [@DataAcquisition](#) - or grab our [rss feed](#).

### **Robot skin senses warm bodies like a snake locating nearby prey**

A heat-sensing film could let robots detect when humans are around, like vipers hunting out warm-blooded prey. The flexible, transparent coating is made of pectin, a low-cost plant material used to set jam.

Source: New Scientist

<https://www.newscientist.com/>

### **Industrial IoT Encourages Growth in Building Automation Systems**

New IoT-related technologies have led to a resurgence in demand for building automation systems which monitor various subsystems such as HVAC, lighting, power systems and security systems.

Source: Arc Advisory Group

<https://www.arcweb.com/>

### **LED electrodes made from graphene for the first time**

German researchers have succeeded in manufacturing organic light-emitting diode electrodes from graphene for the first time

Source: The Engineer

<https://www.theengineer.co.uk/>

### **Your walk could be a password that connects devices on your body**

Sensors on different parts of your body can pick up your "gait fingerprint", letting wearable devices securely connect with each other.

Source: New Scientist

<https://www.newscientist.com/>

### **Europe Leads Growth in Gas Monitoring and Sensing Device Global Market**

5.3% Growth forecast for gas sensing market.

Source: BCC Research

<http://www.bccresearch.com/>

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For previous issues by subject see <http://www.windmill.co.uk/monitorindex.html>

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As a thank you for subscribing we offer you the ComDebug data logging and Com port trouble-shooting software. Log data over RS232, RS422, RS485 or Modbus. Also included is a month's trial of the Windmill 7 logging, charting and control programs. To download go to <http://www.windmill.co.uk/jsarrpsrr.htm>

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