



Will wireless go for gold?

When, in July 2005, the IOC announced that London would host the 2012 Olympics, it started a seven-year process to stage the largest and most expensive sporting event the world has seen. For the organisers, athletes, sponsors and fans, technology will contribute to making the event the best ever. And of those technologies, wireless stands out as one that will change the way many people prepare for this spectacle, with the mobile phone providing the gateway to experiencing the best of the event.

For spectators, the Olympics is a chance to watch sporting prowess – an event that lasts a few weeks, but lives in the memory for years to come. But for those involved, the athletes, the host organisers, the sponsors, the broadcasters and the many support organisations that make it possible, there are many years of preparation and planning to get an edge and to be the best and be remembered.

Getting every possible competitive edge is essential for anyone hoping to win gold at their selected event. This is about the training – the arduous preparation of mind and body over many years to reach the top. To make the hard work as productive

as possible, detailed information gathered from each training session can assist a coach to analyse and refine techniques that may end up shaving those vital seconds, increasing stamina and helping to achieve that podium finish. The ability to pick up telemetry from minute sensors in apparel, such as training shoes, will allow coaches to gather even greater levels of performance information. With these sensors able to be monitored remotely in real time or after a training session, the athletes are able to train under normal conditions, but be monitored as if they were in a laboratory or on the treadmill. Breathing, heart-rate, work-rate and many discipline-specific metrics can be monitored and analysed in detail to understand technique and hone performance. Even providing direct communication between a coach and their prodigy can help to enhance the value of all that training. And this will start almost immediately. Bluetooth, a technology we are all familiar with, will soon include an ultra-low-power facility that can support small battery-powered devices such as sports sensors.

Today, the organisers see the Olympics as a major construction project. Wireless

control and monitoring systems are simpler and easier to install than traditional wired infrastructures. Lights, security systems, access controls can all be wirelessly interconnected to make the control systems more intelligent and flexible.

As the Olympics finally get under way, the biggest impact of the technology will be on the way the event is run. Thousands of competitors, stewards, police officers and an estimated half-a-million spectators will need to be marshalled around London efficiently. As such, security is a critical issue. The security of the venues, the participants and the spectators is of critical importance and under close media scrutiny. Just the management of the masses of spectators moving around one of the world's busiest cities is no small challenge. Providing a secure command and control communications network for the security services and for the event stewards requires a substantial boost to the normal communications systems.

One possible contributor to helping with the crowd security management challenge is the use of smart tickets. These tickets could easily incorporate multi-standard RFID and

Near Field Communications (NFC) devices. Such tickets could contain information about the event and its location as well as being able to provide access to London Transport's facilities in the same way as the 'Oyster card'. With the knowledge of each spectator's destination – the events for which they have tickets – and where they enter the transport network, each journey can be predicted. In this way, near real-time information about the volume of spectators and their accumulated journeys could be monitored and potential crowding problems predicted and minimised. This would help the public safety authorities to manage the movement of the large crowds of people expected to attend the main events, whilst this same information could also provide feedback to the travelling spectator, helping them to select the most appropriate routes for their journey.

Smart tickets could also contain identifying information about the ticket holder, allowing security checks to be made to avoid fraud and to potentially counter terrorism.

Globally, the 2012 Olympics will create TV audiences counted in the billions. For the broadcasters around the world who have

paid for rights to show coverage, they want new and more immersive ways to treat the competitions, maximising the value of every minute of air-time. As broadband wireless technology becomes cheaper, smaller and lighter, the places where pictures can be gathered from will increase. It is possible for the spectator to find himself sat in a coxless four, watching the other crews close in or seeing the same thing that a sprint cyclist sees. These technologies have until today been the preserve of motor-racing, due to their size and weight, but potentially even athletes may be able to generate pictures of the jostle for places in the last 200 metres of a middle distance race.

For many, the mobile phone will become the essential companion to enjoying the games. Mobiles are said to have the computing power of a seven year old PC. So what you are using today as a state-of-the-art PC will probably fit in your pocket or handbag in 2012. These devices could include an integrated digital TV with personal video recorder functionality, high-speed Internet access, location facilities and Near Field Communications. The mobile users' experience of the event

will be very different from any before. Mobile phones can replace paper tickets, getting the spectator on and off trains and buses and into and out of the venues. Spectators will also be able to select the TV coverage that they wish to see from many perspectives. They will be able to select personalised and interactive commentary of the events in their favoured language, both for the events they are at and from other venues, or from wherever they are in the world. For these users, this will be a normal way of consuming TV content, both out and about, and at home.

2012 may seem a long way off, but all of the applications described here are either possible today, or are targeted by new and emerging wireless technologies. With the right combination of technology, expertise and ambition, 2012 will not only be remembered as an excellent sporting event, it will also be remembered as one that saw a sea change in the way it was managed and enjoyed.

Tim.Fowler@CambridgeConsultants.com