



The Place To Be

Media release

From the Minister for Information and Communication
Technology

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TOP CYCLISTS ROAD TEST AUSTRALIAN-FIRST TECHNOLOGY AT MCG

Some of Victoria's best cyclists today demonstrated world-first information and communication technology developed right here in Victoria, that is set to revolutionise the cycling world.

Speaking at the launch of the Bracks Government's ICT Industry Policy, Minister for Information and Communication Technology, Marsha Thomson, said the radio frequency identification (RFID) tracking system for cycling is a great example of how the Victorian ICT Industry is as good as, if not better than, anywhere in the world.

"Victorian ICT companies' iCrystal and Victorian Machine Vision teamed with the Box Hill Institute to develop a simple and affordable world class product that is on the road to being a world beater," Ms Thomson said

"This technology is adaptable, easy to use, cost-effective and puts technology that was previously only available to elite athletes in the hands of amateur and club cyclists."

iCrystal Director and head of the RFID Association of Australia, Mike Clarke, said that the Radio Frequency Identification in Sports Events – Cycling (RISE-C) is a cutting-edge radio tracking solution that will benefit race officials, coaches and cyclists in everyday racing.

"The RFID tags are inexpensive and not prone to loss or breakage. They can be attached to race numbers on cyclists' backs and there is scope to combine the technology with smart RFID Licence Cards that can be scanned for cyclist details when officials record entries.

"RISE-C can provide real-time tracking of cyclists throughout a race and can publish live information to a computer for display to officials, to a screen for spectators, team managers, coaches and for printing results locally and even to the internet," Mr Clarke said.

Photo finishes and placings lap by lap will be captured by a high speed camera triggered by the RFID readers.

"Active tags are heavy and expensive. This solution costs only a few dollars and is attached to the race number making it suitable for road racing and track racing," Ms Thomson said

"Similarly, while active tag detection needs to be on the roadway requiring fixed and cumbersome infrastructure, RISE-C is from overhead making readers cheaper and more adaptable to different types of events. RISE-C is even usable on a vehicle roof rack making it suitable to follow road races to track and transmit their progress."

Ms Thomson said the technology was a great example of what could be achieved in the collaborative climate that the Victorian Government is cultivating within the ICT industry.

BACKGROUNDER - RFID for Sports Events – Cycling (RISE-C)

RISE-C uses passive radio frequency identification (RFID) technology that:

- Does not depend on battery operated RFID tags;
- Is inexpensive (\$5 per tag, including the race number);
- Is not prone to loss or breakage;
- Can be attached to race numbers on cyclists' backs; and
- Can be combined with smart RFID License Cards that can be scanned for cyclist details when officials record entries.

RISE-C uses light-weight overhead antennae:

- Mounted on a stand by the road or track;
- Mounted on the roof of vehicles following a road race; and
- With a read range from eight to 15 metres.

RISE-C can provide real-time tracking of cyclists throughout a race and can publish live information to:

- A computer for display to officials and for printing results;
- A screen for spectators, team managers and coaches;
- The internet for anyone to access the live race progress.

How RISE-C works

RFID Tags

The RFID tag is permanently attached to the race numbers that are attached to the cyclists back. This arrangement imposes no additional effort for race organisers and does not depend on fixtures to the bike. Being small and paper thin and not requiring batteries the attachment to the race number is permanent and reliable.

RFID Reader

High-speed RFID Readers around the circuit (such as checkpoints and at the finish line) read the information as each cyclist passes, especially large packs of cyclists travelling at speeds over 50kph .

Optional high speed camera for very close finishes:

When the RFID Reader senses a cyclist entering the finish zone a high-speed camera can be triggered to provide photo finishes of the very close results that often occur on the finish line and after every lap. Information from the RFID reader and the image from the high-speed camera is processed, filtered and saved onto the computer. The image can be displayed for race officials and spectators and published to a website.

RFID Middleware and Mobile Communications

The middleware software configures and controls the RFID reader. A cyclist's tag will be read many times in one pass and the middleware filters out the one desired read. Each filtered read is saved in a local database which is polled by a publisher module that looks up each rider's name in a reference table. The publisher module sends the data to the event results system and to a database on a web server using mobile data communications from the laptop computer at the event.

Publishing

The web server holding the database tracking the cyclists publishes the results on a website seconds after they occur. Race organisers will receive the data from the laptop computer and post it into the event results application through local wireless communications. Officials can display the information at various points around the circuit for viewing by spectators.