

In 1994 Mike Marsh and his team at the CSIR amazed the world with a technology that could scan a loaded supermarket trolley in one instant.

Since then radio frequency identification (RFID) technology has been adopted by everyone from Walmart to Ford Motor Corporation.

Now Marsh believes he and his partner Trevor Hodson have invented a technology that will take RFID another quantum leap forward.

They have developed a

technique that enables them to identify, locate and track tagged objects within a 100 m range of a basic RFID reader.

The original technology, developed in 1990, allowed many transponders to communicate with one reader at the same time – hence the experiment with the trolley.

The breakthrough with RFID-radar is the ability to measure the distance travelled by a signal from a transponder to a reader, accurately, over long dis-

tances, using minimal radio spectrum and with low-cost transponders and readers. “This measurement allows us to identify, locate accurately and track the movement of tens of transponders at the same time,” says Marsh.

In older generation RFID systems, operating ranges were a few centimetres, so location information was not important. Because RFID-radar has increased the operating range to just short of the 100 m mark

location information together with identity information becomes essential. The new technology will result in the development of new applications, including the tracing of individual animals in a herd, the movement of assets in a building, and the location of goods in a warehouse.

Marsh is considering whether to develop this new technology within his company, TrolleyScan, or to find a partner with the resources to take it to the global market. ■