



State Police evaluates as part of its recruitment tests, a RFID-enabled pilot ATHLETIC RACE TRACKING SYSTEM

Tracked contestants and automated results of athletic races conducted during a police recruitment drive

Provides far greater efficiency and accuracy of results than by any manual timing system

Cost-effective substitute in events where ultra-expensive sports timing equipment is not required



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TECHNOLOGY

Solution:

EPC Gen2 compliant personnel tracking solution

Tag Type:

Personna™ UHF Passive

Reader/Antenna:

Xtenna™
Xtenna Proximity™

Method:

Multiple Tracking via Integrated Reader/Antenna modules

Integration Platform:

RFID Middleware:

Xtenna™ WebToolkit
Xtenna™ Studio

Application: Essen RFID's Personnel Tracking System

Database: SQL Server 2005 Exp. ed.

Tag Manufacturer/Supplier:

Essen RFID, with US based chip inlay

Reader/Antenna Manufacturer:

Essen RFID, with US based module

Systems Integrator:

Essen RFID

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CASE STUDY

KEY REQUIREMENTS:

In any form of competitive racing, obtaining accurate timings is most important in establishing correct results. This police recruitment programme had many candidates participating within the limited time available during the event. The challenge for the organizers was to efficiently conduct the races in less time with accurate timing of candidates, on the basis of which the participants scored marks.

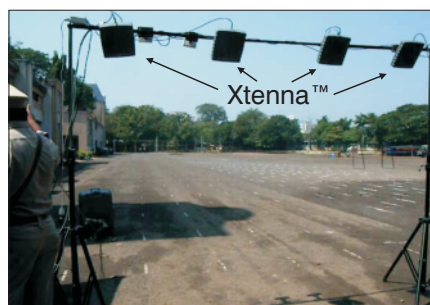
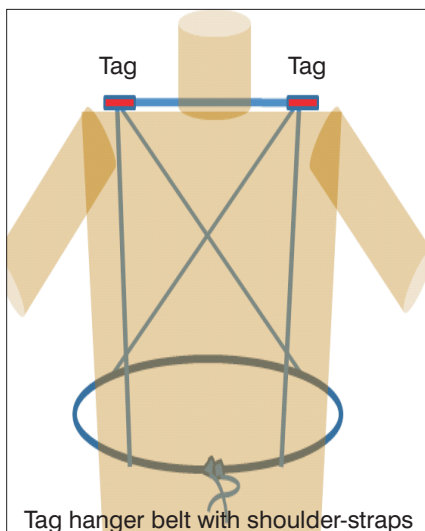
The existing system followed manual timing methods using a stop-watch. This had a lot of scope for human errors and the captured timings were not accurate for each participant. This made the system error-prone and vulnerable to unfair marks that could fail eligible candidates.

SOLUTION:

The programme needed precision timing without human error in order to clearly establish individual merit, but did not require ultra-expensive sports timing equipment. Essen RFID suggested RFID technology as an automated system for capturing accurate time. Its Xtenna™ antenna-readers easily detected tags attached to the participants. Essen RFID's tracking solution captured extremely precise timings when every runner crossed the finish line, enabling far superior accuracy than by any manual timing system.

IMPLEMENTATION:

The recruitment process had a running race as one of the criteria for selection. Two tracks were used at the venue. At a time 10 candidates ran on 10 lanes of track. Xtenna™ antenna-readers were mounted at the finish line to detect tags of participants as they crossed the line. Each participant was given a shoulder-strap belt to wear that had two PERSONNA™ tags attached at the shoulders. The tags were registered into the database using Xtenna Proximity™. Also, a signal light was installed at the end of the finish line, linked to the system.





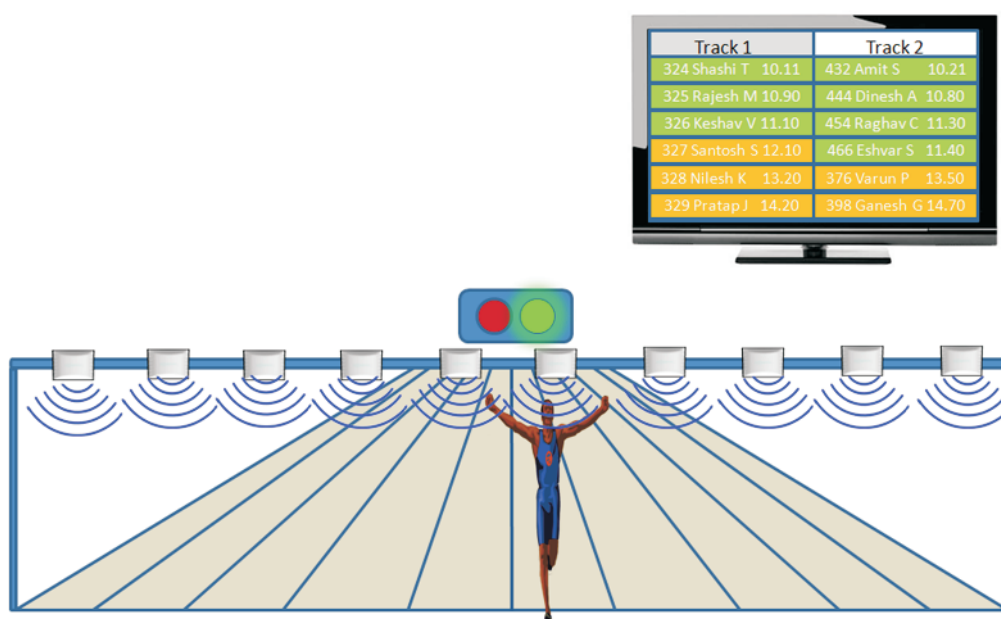
CASE STUDY

WORKING:

The following steps show the process flow of the Race Tracking System:

Process Flow:

1. Before the race, PERSONNA™ tags are registered into the database as paired tags, using Xtenna Proximity™. This is a one-time process. Each pair of tags is affixed on a shoulder-strap belt that is reusable.
2. The candidates will be running in batches of 10. Hence each candidate is issued a Docket Number, which consists of a batch number allocated to every batch and the candidate allocated a sub-batch marked 1 to 10. For example, if 1001 is the batch number, candidates in that batch will have numbers 1001-1, 1001-2 till 1001-10.
3. The participants are made to wear the belts, each having two tags on them, and then take their positions to start the race. The race is conducted through the race tracking software. The official clicks on the 'Start' button in the software and a recorded voice along with the signal light are activated to alert candidates to be ready. The race participants start running as the light turns 'Green'. Along with the signal light, the race timer in the software is activated.
4. As each participant crosses the finish line, his pair of tags are detected by the Xtenna™ antenna-readers mounted over the line, and the exact time is logged into the database. The signal light returns to default when all tags in the race are logged in and the race is completed.
5. On completion of all races, the system report lists out the timings of all participants and the results are announced accordingly.





CASE STUDY

BENEFITS:

- RFID tracking enables accurate timing and scoring systems.
- The technology is cost-effective in providing automation and precision without requiring expensive sports timing equipment.
- The system is easy to setup, operate and dismantle.
- RFID is ideally suited as efficiency increases with increasing speed of the participants.

LINKS:

Hardware:



Tags:



Software:



Reference Example:

<http://www.essenfid.com/Mailer/persontracking-flash-demo.pdf>