

THE DISCUSSION OF THE EFFICIENCY, ENERGY CONSERVATION, AND CARBON REDUCTION OF THE CLOUD TIMING SYSTEM IN MARATHON EVENTS

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Economic development and excessive material enjoyment have led modern people to pay increasing attention to sports to enhance their health and running has become one of the sports choices for many people. Large marathon events require the use of accurate chip timing systems for timing and ranking because of the competition and the award of prizes. The system architecture is that the timing zone and the printing zone are connected by some network cables. The runner enters the finish line with a chip, and after being sensed, the timing system calculates the time and ranking then sends them to the printing zone. The runners then go to the printing zone to print the certificate. After the event, the timing company releases all the scores on the Internet for the runners to inquire. The cloud timing system avoids several difficulties: 1. The timing zone and the printing zone exchange information by network cables with physical limitation of the transmission distance, which might restrict the venue's layout. 2. The network cables between the timing zone and printing zone might be kicked by many runners and interrupt the printing service. 3. The runners intent to print out their certificate as soon as possible, and a large amount of paper usage is not aligned with the energy-saving and carbon reduction for the eco-friendly spirit. Therefore, evolving the chip timing into a cloud timing system, all information from the start to finish line and checkpoints is transmitted to the cloud host, and the runner can use a mobile phone to access the rank and time in real-time, without having to print the paper certificate, achieving the energy-saving and carbon reduction. Advantages are: omitting long network cable to connect the timing zone and printing zone, helping the moving line arrangement of the venue, and also avoiding the inconvenience caused by network disconnection.