Cycling Track Sales Consulting

The diversity of events in Cycling Track makes the sport be one of the most complex for timekeeping. Quite different timing methods are required for various styles of race.

This document explains the various aspects of this discipline as well as the high requirements for the configuration of the installations and timing equipment requiring the precision to the thousandth of a second.

Why trust Swiss Timing?

Specialising in timing, scoring, data handling and broadcast solutions at major sports events throughout the world, Swiss Timing's technical services are structured to support international sports events, often with the involvement of The Swatch Group watch brands.

At very high level sports events, the timing has to comply with the requirements of the international sports federations, ensuring competitions are perfectly organised whilst satisfying the requirements for precision and reliability.

Choose the best equipment

Schema representing a cycling track 250m with the timing equipment

Start equipment

Starting gate: required for pursuit races.
Recommended units: Pursuit A / Pursuit B

Tracker: display to show the start countdown sequence. Red and Green semaphore lamps for pursuit. Integrated keyboard for lap counter after the start.
Recommended units: Set of 2 displays

Race equipment

OSV STAR: photo finish colour camera. The cameras can be installed inside or outside the track.
Recommended units: Primary /Secondary/Pursuit A/Pursuit B

Lap counter-3 sides: to display numbers to 199 on 3 faces. Hand held console easy to use.
Recommended units: one unit

Videoboard: to display all necessary information for the race as startlists, results, etc...
Recommended units: one unit

Gemini: LED numeric display with automatic luminosity. Indoor and outdoor applications.
Recommended units: 2 lines pursuit A / 2 lines pursuit B

Transponder: to transmit data through antennae placed on the start, finish and intermediate time lines
Recommended units: One for each bicycle

Loop Antenna (transponder collector): to transmit data from the transponder to the Quantum timer.
Recommended units: Pursuit A/Pursuit B/Finish

Control room

Quantum CT rack: Primary and Secondary Quantum Cycling Track timer with connection to all track equipment

Laptop: compatible with Scan'O'Vision Star and Quantum CT
Recommended units:
Scan'O'vision: Primary /Secondary/Pursuit A/Pursuit B
Quantum: Primary /Secondary

Printers: Quantum online printer with integrated battery
Recommended units: Primary /Secondary

UPS: power supply UPS 1500VA, 230V
Recommended units: for Primary/Secondary/camera and transponder

Key points of the velodrome

Track length: 200m, 250m or 333m
According to the UCI* norms, the track must measure min. 250m in order to host the World Championship or the Olympic Games.

Pursuit A/Pursuit B: start and finish line for pursuit races with a standing start.

100m inter: intermediate measurement point for sprint races.

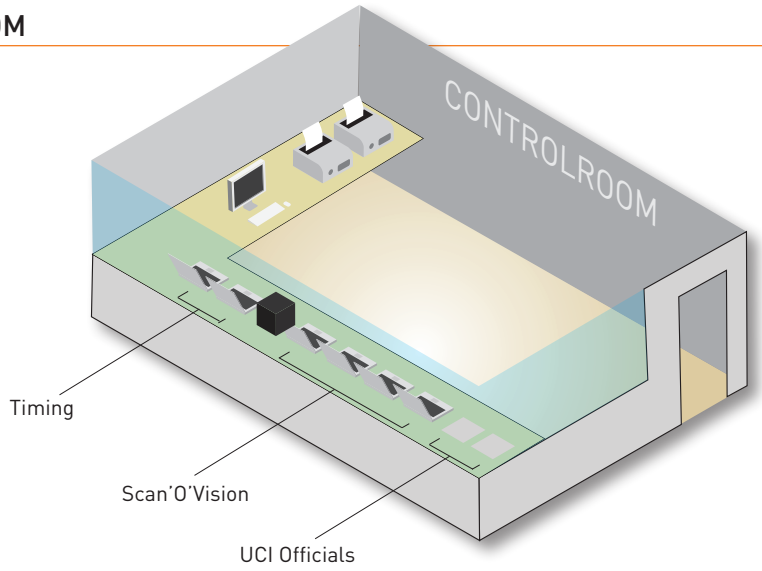
200m: white line across the entire width of the track, placed at 200m from the finish. It raises the timer for the last 200m of the race.

Finish: sprint finish line.

*International Cycling Union

Focus on the main products

CONTROL ROOM



Room specifications

- Lockable room
- Climate (20-23°)
- Internet connection
- Power supply: 110/240V 50-60Hz

Quantum CT Timer

The Quantum is the new generation of timer used for Cycling Track. This timer is interconnected with the transponders system to allow and simplify data handling.

To ensure the security of the results, the Quantum offers primary and secondary solutions. To be used in such way, two timing computers are necessary.

Primary and secondary Quantum timer allow a high precision (1/1'000'000s). All information and pulses entering in Quantum are always received by Primary and Secondary timer.

In terms of data handling, this system allows

- the easy use of a start list file
- the display of an excel interface to get the results

Contact strips are placed on the Pursuit A, Pursuit B, 200m and finish lines. When the rider passes on the contact strip, this gives an impulse and sends the timing data to the Quantum timer. This information is used for the unoffical and intermediate times.

Laptop compatible Scan'O'vision Star

A fully configured and tested laptop with Windows and Scan'O'Vision software interface for the STAR cameras. It includes 2 Gigabit Ethernet connections (camera and networking).

Additional laptops are connected to Quantum timer rack to do timing and to send data to scoreboards.

STARTER KIT

Starting Gate

This system has been designed and developped by Swiss Timing in collaboration with the UCI (International Cycling Union).

It is used on cycling events such as Individual and Team Pursuit, 500 meters Time Trial, 1Km Time Trial and Team Sprint.

The starting gate may be used as a stand-alone training unit, where a pushbutton manually triggers the opening and closing of the actuators. When used in a pair, it is linked to the Tracker pursuit clocks with a dedicated controller, providing a fully automated start sequence, and a perfect synchronisation of the opening of both gates.

Tracker

The Tracker is used to show the start countdown sequence. During the start phase, the tracker displays a 50 seconds countdown programmable with sounds at 30s, 10s and at the last 5s. Another sound is played at start (0s), as required by the UCI rules.

As soon as both Starting Gates are opened, the timing starts and the Tracker automatically switches to "Lap Counter" mode after 5 seconds. The number of laps are entered at the Main Judge Controller prior to the race.

When connected to the timing system, red and green semaphore are displayed during the race to indicate who is the leader.

The Tracker is also used during the elimination race to show the number of the eliminated competitor.

RACE EQUIPMENTS

OSV Star

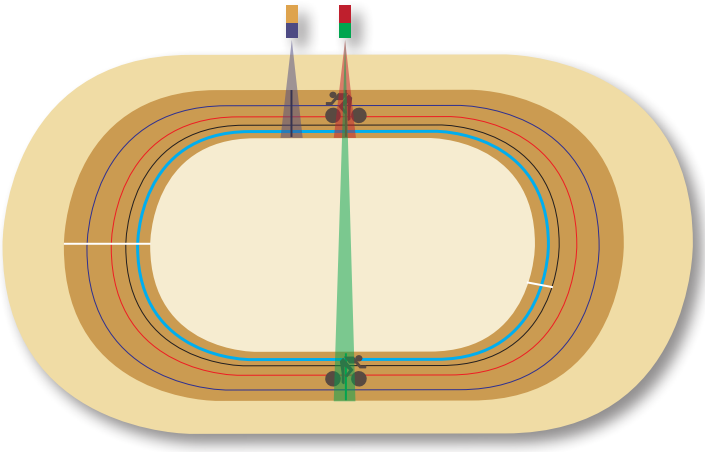
The OSV Star photo finish camera system measures in thousandths of seconds the times at the finish line.

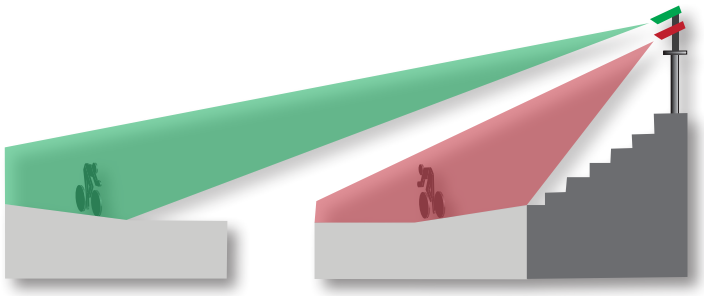
It takes up to 2000 shots per second at a high resolution of 2048 pixels vertical line, and the corresponding time is displayed on each picture.

The exclusive patented Spatial Alignment system for the 20/20 Vision series allows the camera to be easily aligned on any finish line.

The OSV Star camera is self-contained. Computer connection is made through a standard Ethernet (1Gb/s) cable ; the camera has connections to the track (start, ready and finish).

Cameras installed outside the track





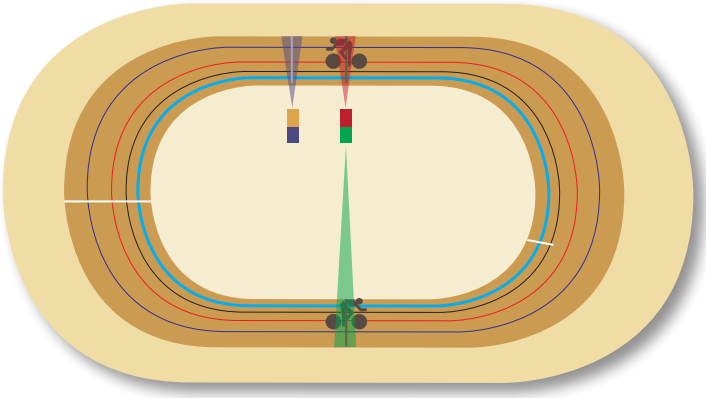
Camera Sprint

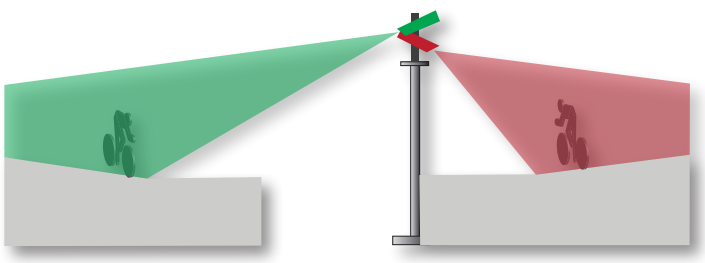
- Primary
- Secondary

Camera Pursuit

- Pursuit A
- Pursuit B

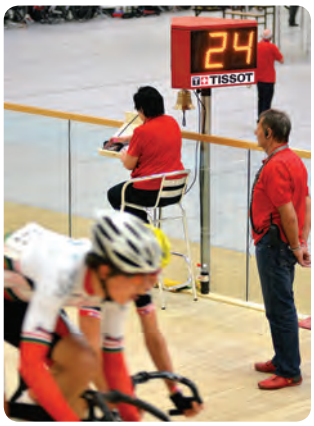
Cameras installed inside the track





Lap Counter - 3 faces

The lap counter features a design with 3 faces, each displaying numbers from 0 to 199. This makes the display visible at almost 360 degrees, and at distances of up to 130 meters.



The luminosity automatically adjusts to ambient light conditions thanks to an integrated sensor.

Gemini

The Gemini displays the running time, intermediate and gap time during the competition.
It is a numerical display using 7 segment amber LED digits for optimal contrast. This scoreboard is available as modules of 9 digits. Full compliance with other Swiss Timing devices is guaranteed.

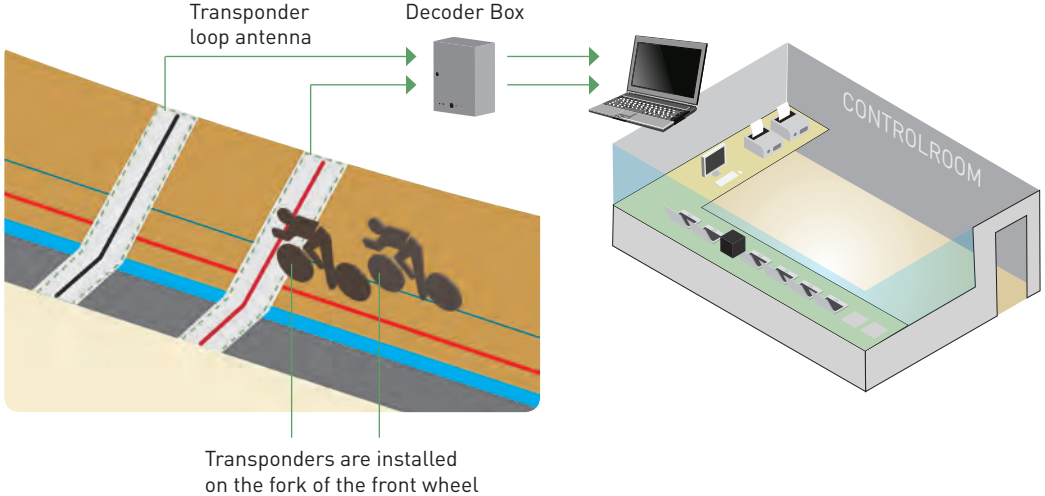
Numerical displays are clearly visible at distances up to 120 m. An integrated sensor automatically adapts the brightness to the ambient light conditions.

Transponder and antenna systems

A transponder is installed on each bike, more specifically on the front wheel (on the fork). The transponder emits a unique code, broadcast by radiofrequency (RFID), and detected by an antenna and radio receivers placed under the track.
One of the main advantages of the transponder system is that you can use it for timing (with operator) and also for training (without operator).

Data transmitted to Quantum system are used to:

- locate an athlete in a group
- count the number of laps
- determine the time order at an intermediate point
- give quick results (photo finish required for the finish and to homologate records)



Training System

The deployment of modern technologies not only allows an increase in the precision and complexity in acquiring timing-related information. It also opens up completely new ways of training supervision and training control beyond conventional methods. But the best thing is that its utilisation is as easy as cycling.

The system is based on a fixed arrangement of multiple transponder loops installed under the track of the velodrome. The coach assembles individual tracks by selecting the desired loops on a tablet, if required, independently for each athlete. As a result specific intermediate, sector and finish times as well as speed information are available in real time.

Configuration settings and gathered results are storable and therefore particularly appropriate for progressional and periodic training. Training close to competition level also comes with the team and pursuit racing functions.
An interface to public scoreboards for result presentation and the integration of start gates in the training are further notable features.
One of the advantages of CT trainer is that it can be accessible and usable on all devices with a browser and an internet connection.

The CT Training System consists of:

- CT Trainer Listener (transponder server component)
- CT Trainer (client component)

Optimum installation for accurate results

In order to help you to get the best cycling track configuration, Swiss Timing provides a technical configurator. By answering a few questions from this document, it will help the sales team to recommend the best equipment adapted to your specific needs.

Swiss Timing provides technical specifications and detailed schemas useful for the cycling track configuration such as standard wiring schema, tracker and camera mounting, installation of antennae on the track, etc...

Do not hesitate to contact us for more information.

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