



## TIMING & SCORING SYSTEM

### Overview

The Timing and Scoring System for Cross Country and Biathlon is our complete solution for professional winter sports events.

Starting from real time data acquisition on the track through judging support and results data management, the system meets all professional demands and has proven its capabilities and reliability in world-class events, such as Olympic Games and World Championships for more than ten years.

### SCOPE OF SUPPLY

- Start Display with Start Control Terminal
- Starting Gate (for Individual and Sprint Events)
- Transponder System and Decoder Boxes
- Cyclops infrared light barriers
- Scan'O'Vision photo-finish camera
- Gemini Scoreboard
- Timing Module and Timing Rack
- Push buttons
- Telephone boxes with headsets
- Connection Boxes
- Operator PC with Ski123 software
- Shooting System (optional)

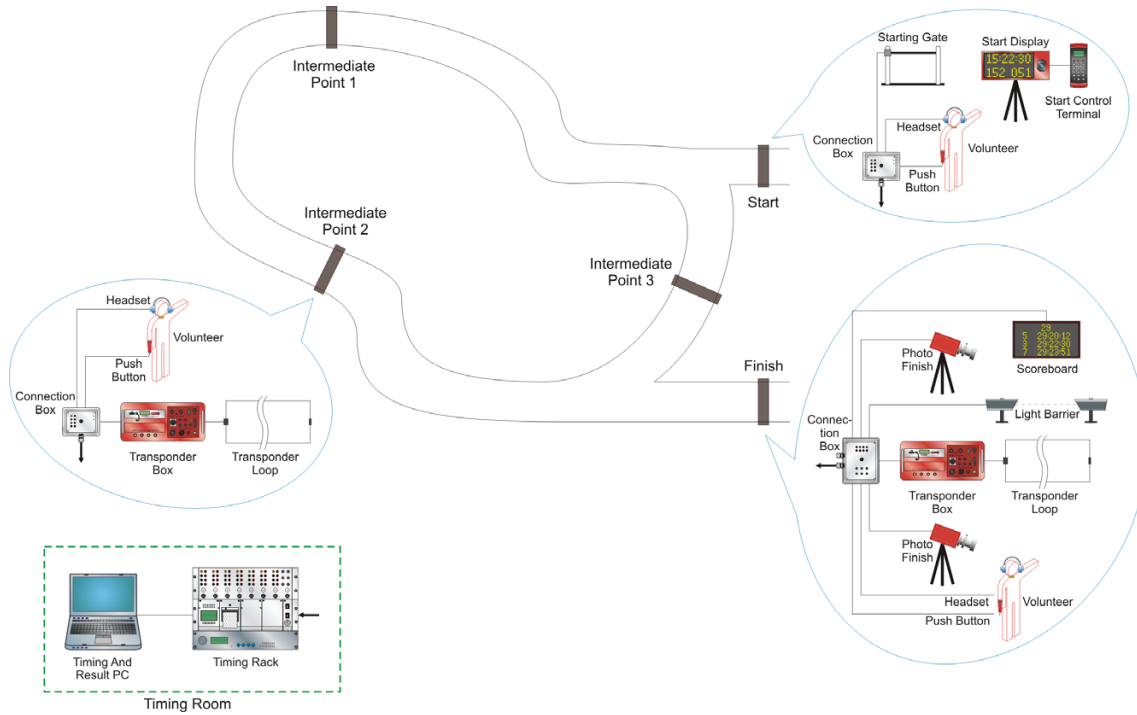


Asian Winter Games in Astana-Almaty



Photo-finish camera

## SYSTEM SCHEME



## START DISPLAY

The Start Display is the core of Swiss Timing's new Cross Country and Nordic Combined competition system.

### Features:

- Display in accordance with current FIS regulations
- Indicates start time and athlete identification
- 6 digit display for day and race time for pursuit races
- 3 digits for start number
- 3 digits for count down with count down signal
- Integrated red and green lights
- Battery supply, charger and tripod provided



## START DISPLAY CONTROL TERMINAL

The terminal is used to receive, store, generate and transmit start-tables to the Start display. It is also used to set the daytime of the Start Display.

### Features:

- Terminal with USB charger
- GPS mouse for synchronization
- Start display control software with start lists



## START GATE

The start gate responds to the most severe criteria. It's high quality mechanical construction guarantees for remarkable accuracy and solidity in all conditions.

### Features:

- Accurate start time measurement
- Two versions for individual and sprint events (Biathlon)



## TRANSPONDER SYSTEM

A transponder-based timing system is supplied for measuring and presenting all intermediate times, including the related BIBs. The required number of units depends on the course layout. Our proven transponder system is in accordance with the FIS regulations.

### Transponder box features:

- Detection and decoding of the transponder signals
- Internal timer with 0.5ppm and a timing resolution of 0.002s
- Waterproof case with connectors
- Rechargeable battery, serial data interface, 10/100BaseT Ethernet
- Detection loop with a maximum length of 16m



### Transponder features:

- Active transponder activated by an electrical field
- Internal battery with 5 years lifetime or approx. 100 000 readings
- Neoprene ankle strap
- Detection height: 90cm, weight: 16g
- Maximum speed of the athlete: 70km/h



## CYCLOPS LIGHT BARRIER

The Cyclops infrared light barrier system has an operating distance of up to 120 meters and a response time of  $\pm 0.5$  ms.

### Features:

- FIS standard with transmitter and receiver
- Up to 120m operating distance in normal conditions
- Response time of  $\pm 0.5$ ms
- Power supply: internal battery



## PHOTO-FINISH COLOR CAMERA

The Scan'O'Vision Star photo-finish camera delivers high performance time measuring at the finish line with 2000 shots per second.

### Features:

- High sensitivity, even in low light conditions
- Spatial alignment, 4 axes head
- Ethernet Gigabit transmission
- Resolution: 2048 pixels
- Acquisition speed up to 1/2000s
- Delivered with a 70–300mm zoom lens

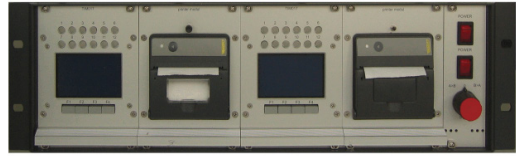


## ELECTRONIC TIMING SYSTEM

The TIM017 has a high speed capture of all 32 input channels. The timing resolution of 0.0001s guarantees high precision timing. All control is done by a connected PC.

### Features:

- Up to 32 impulse channels (for photo cell, push button,...)
- Possibility to disable or enable specific impulse channels
- Electronic timing system triggers the running time feed for scoreboard module
- Thermal printer for continuous paper printouts
- In accordance with FIS regulations



## GEMINI SCOREBOARD

The Gemini scoreboard is a modular multidigit or 12 alphanumeric characters scoreboard and time display which uses advanced amber LED technology and allows indoor as well as outdoor applications.

### Features:

- modular design allows stacking for multiple lines
- automatic brightness adaption
- up to 120 meters visibility



## TELEPHONE SET WITH HEADSET

- Multipoint wired voice device
- Buzzer for call even if powered off
- Internal 9VDC battery
- Including microphone and headset



## OMEGA OIT3 PUSH BUTTON

- 3m coiled cable
- Normally open contact
- Banana plugs



## SHOOTING SYSTEM (OPTIONAL)

- Target:
  - 30 x shooting targets are required to fulfill the IBU regulations terminal
  - Required to enter the necessary athlete information at the shooting range
- Central Unit:
  - Connected to the shooting range to collect, process and distribute shooting data



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