Timing Solution for Swimming

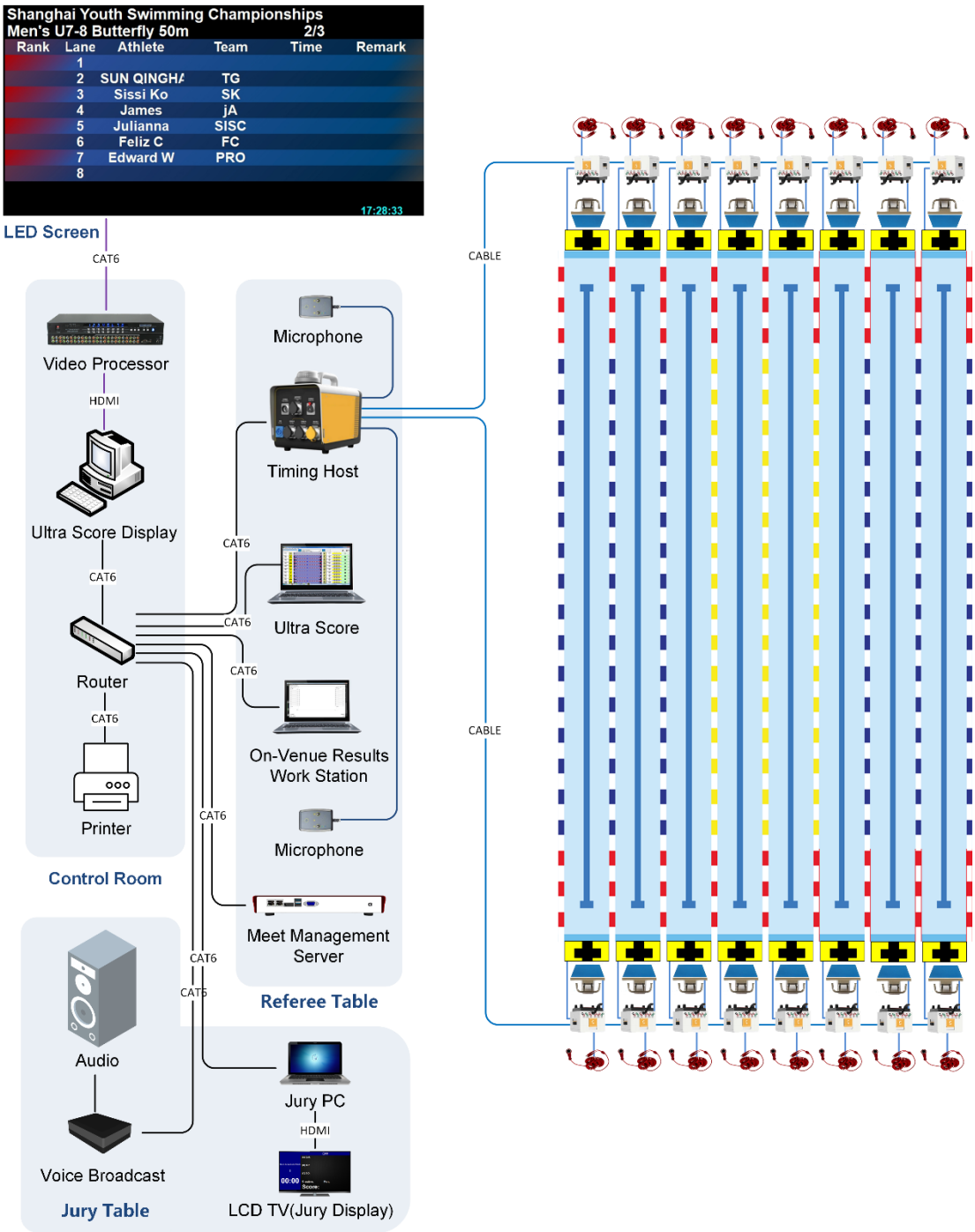
This scheme is a standard scheme for LED display screen of indoor stadiums and gymnasiums, which is applicable to international standard swimming competitions, supports the use of 8-lane regular swimming pool. It can complete many functions such as game timing, score display, temporary notice and advertisement broadcast, player information display, live broadcast, score superposition and so on.

It is an ideal choice for most of small and medium-sized stadiums.

The swimming timing competition system of this scheme is a set of new, low-cost, high-efficiency, standardized interface and convenient stadium timing and scoring system. The equipment configuration can meet the technical standard requirements of swimming competition for the whole set of swimming timing equipment and score processing. In the process of design and R & D, the product refers to the international and domestic requirements for swimming automatic timing system, and fully meets the following specifications:

- FINA SWIMMING RULES 2021
- SWIMMING COMPETITION RULES 2019-2022 (CHINA SWIMMING ASSOCIATION)

1. System Wiring Diagram



1.1 System Description

1) Set up a local area network within the venue.
2) The jury area needs to be equipped with a computer for jury. The LCD TV is connected to the jury computer to display the jury information. In addition, a voice broadcast box and audio real-time broadcast are configured, and the recording computer and voice broadcast box are connected to the venue LAN.
3) The venue should be equipped with 1-2 synchronized LED display screens, and the large screens should be connected to the LED data and control computer.
4) The large screen control PC to install swimming timing software, displaying scores, athlete ranking, participant information, etc. The large screen control PC to connect to the venue LAN.
5) Each lane is equipped with 2 sets of standard Touchpad, Backup Grip Switch, Decoding Module, and Relay Error Sensor, which are connected with dedicated cables and connected to the swimming timing host. The swimming timing host is placed in the referee's seat and connected to 2 microphones operated by the referee. The swimming timing host is connected to the local area network of the venue.
6) The judges shall be equipped with another computer, which shall be connected to the stadium LAN with the performance management server, and log in to the swimming arrangement score processing workstation for competition arrangement and score processing.
7) All devices are connected to the venue LAN, and the timing information during the game will be transmitted back to the timing and scoring computer in real time and displayed on the screen.

1.2 Main Functions and Features

1) High precision timing and scoring: it can record the competition results and judge the ranking.
2) Real time timing and scoring: the competition timing and scoring information and athletes' score can be transmitted to the LED display screen in real time.
3) Simple referee operation interface: the referee can not only use the keyboard and mouse to control the competition, but also connect other external devices to operate.
4) Professional scoreboard display: Scoring and timing operation, layout of scoreboard can meet international game rules.
5) Synchronously print the competition results and competition ranking.
6) Remote referee table and timing table: the referee operation computer and timing computer can be placed anywhere near the court.
7) The swimming timing competition control system is applicable to the swimming pool with a length of 50 meters or 25 meters and a lane width of 2.5 meters. Be able to complete the timing of single event or relay competition in 50m, 100m, 200m, 400m, 800m and 1500m events.
8) The equipment supports multi-point simultaneous click operation such as starting host and computer control host, and can automatically record results and judge ranking. The timing resolution reaches one thousandth of a second, and the double-click error does not exceed one thousandth of a second. During the competition, after each athlete touches the board, the printer can synchronously print the results and the ranking of the athlete this time. If necessary, the segment and final results can be reprinted after the competition.
9) It has the function of correcting and dealing with fouls.
10) During the competition, the competition clock and the results of swimmers in each lane can be transmitted to the display screen in real time, and the effective results can be displayed to one hundredth of a second.
11) It has the jump detection function and detect the athlete's departure reaction time.

1.3 Product Configuration

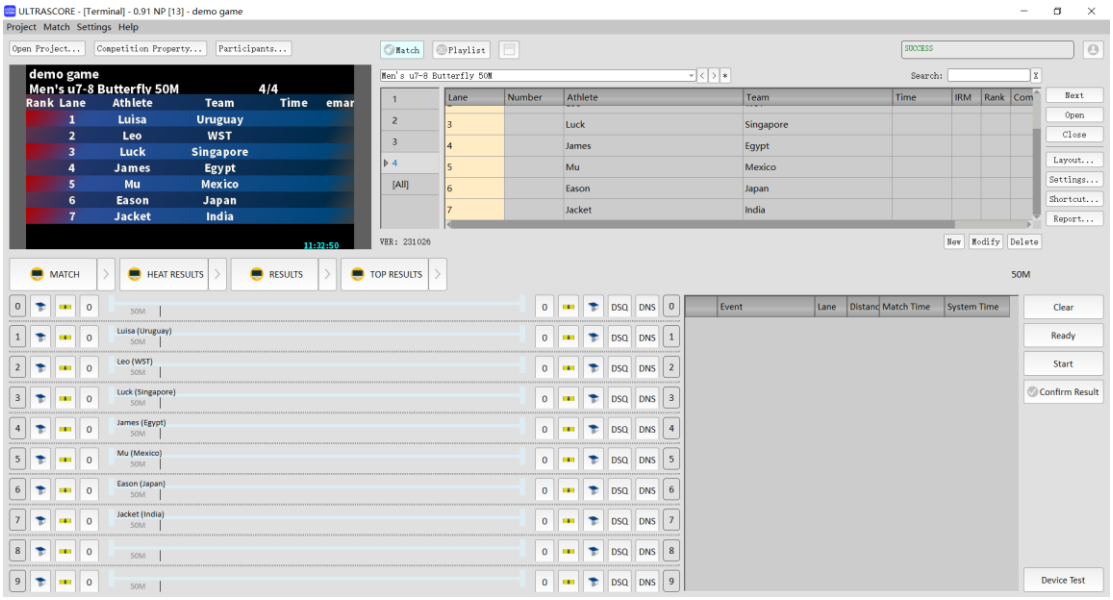
Product	Type	Qt.
Timing and Scoring System for 8-lane Swimming Competition		
Check-in Area		
PC	Windows System	1
LCD TV	50inch	1
Voice Broadcast	KS-TTS-MODULE	1
Loudspeaker	/	1
Timing and display System		
LED Screen	/	1
PC for LED Screen Control	/	1
Switch	/	1
Timing & Score display Software	ULTRA SCORE NETWORK	1
Timing Host	KS-SW-500	1
Microphone	KS-SZ-MC3	2
Extension Cable	KS-SZ-YC	1
Main Control Cable	KS-SZ-CA-A	2
Main Control Cable Extension Cable	KS-SZ-CY	1
Touchpad	KS-SW2400PRO	17
Touchpad Cart	KS-SZ-SW2400PRO	2
Accessories for Fixing	KS-SW10D	1
Backup Grip Switch	KS-SZ-W	24
Decoding Module	KS-SZ-SP	17

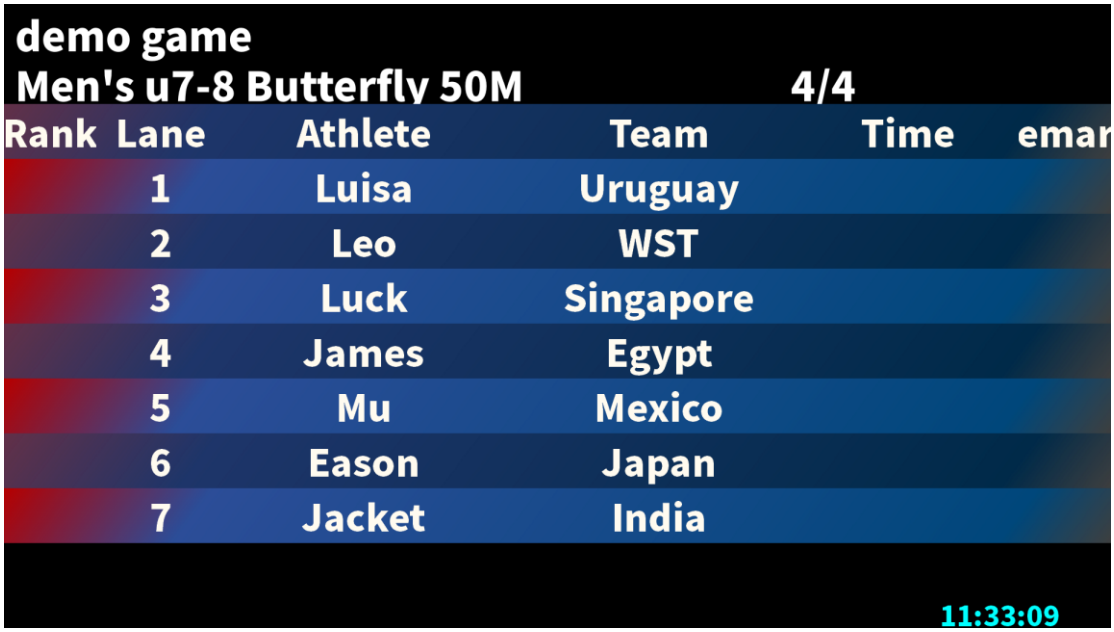
Flight Case of Decoding Module	KS-SZ-CASE	1
External Relay Error Sensor	KS-ST3	17
External Relay Error Sensor Cart	KS-SZ-ST3	1
Backstroke Ledge	KS-Y20	17
Backstroke Ledge Cart	KS-Y20-10	1
Flight Case	KS-IF-CASE	1
Online Printer	KS-SZ-PE2	1
Grade Processing System		
Meet Management Server	KS-MMS-MINI	1
PC	/	1

2. Specifications

2.1 Timing & Score display Software

Products	Details
Timing & Score display Software	Type: ULTRA SCORE NETWORK Support: swimming English version Functions: ◆ Main functions: ◆ 1. High precision timing and scoring: able to record competition results and determine rankings ◆ 2. The timing and scoring comply with the rules of the International Swimming Federation. ◆ 3. Suitable for LED/LCD display of scores, teams, team information, team emblem, national flag, and logo; Display instructions for fouls, pauses, and substitutions; Display the game time, pause time, system time, and countdown function. ◆ 4. The software scoring interface complies with the corresponding international competition rules. ◆ 5. The layout of the competition interface can be adjusted, and the displayed content can be added or deleted. Special effects such as font color and font can be set for editing. ◆ 6. Collaborating with a timing and scoring system, real-time display of single venue scores and summary display of multiple venue scores. ◆ 7. The summary display screen can automatically adjust the display layout according to the competition progress. ◆ 8. The collaborative score processing system can display real-time images such as competition review, score announcement, and ranking announcement. ◆ 9. Automatic data backup, in case of computer failure or power outage, the previous screen will be restored after restarting.




demo game
Men's u7-8 Butterfly 50M 4/4
Rank Lane Athlete Team Time emar
1 Luisa Uruguay
2 Leo WST
3 Luck Singapore
4 James Egypt
5 Mu Mexico
6 Eason Japan
7 Jacket India
11:33:09

2.2 Timing Host

Item	Details	Item	Details
Product	Timing Host	Type	KS-SW-500
Size	260 x 160 x 170 (mm)	Weight	5.0kg
self-test function	Software and hardware startup self-test function	Timing Accuracy	≤0.001s
Time of Endurance	7*24 hour	Display Screen	5 inch HD LED
Operating Environment	Win7/Win10	Accessories	Host bracket, host cable, power cord, charger
Functions			

1. High precision timing and scoring: able to record competition results and determine rankings
2. The timing and scoring comply with the rules of the International Swimming Federation.
3. Suitable for LED/LCD display of scores, teams, team information, team emblem, national flag, and logo; Display instructions for fouls, pauses, and substitutions; Display the game time, pause time, system time, and countdown function.
4. The software scoring interface complies with the corresponding international competition rules.
5. The layout of the competition interface can be adjusted, and the displayed content can be added or deleted. Special effects such as font color and font can be set for editing.
6. Collaborating with a timing and scoring system, real-time display of single venue scores and summary display of multiple venue scores.
7. The summary display screen can automatically adjust the display layout according to the competition progress.
8. The collaborative score processing system can display real-time images such as competition review, score announcement, and ranking announcement.
9. Automatic data backup, in case of computer failure or power outage, the previous screen will be restored after restarting.

SWIMMING TIMING
SWIMMING
SWIMMING TIMING

2.3 Microphone

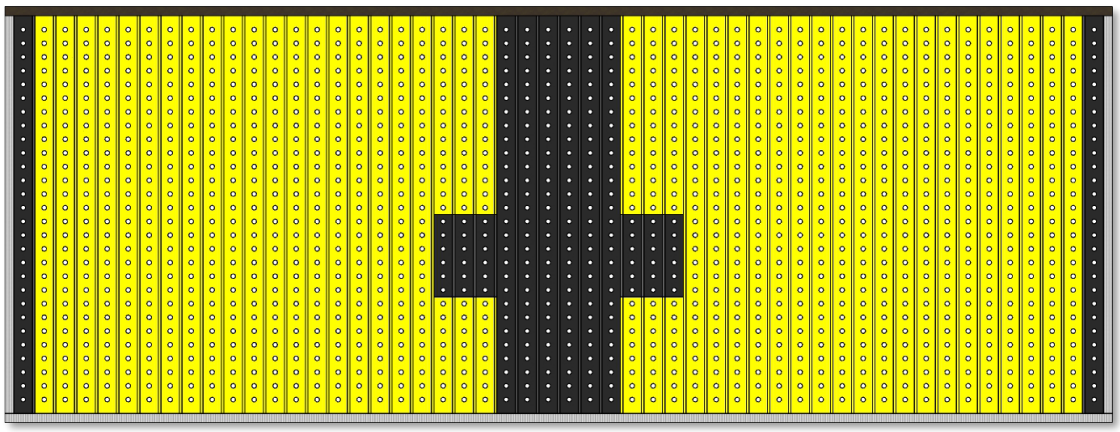
Products	Details
Microphone	Type：KS-SZ-MC3 ◆ 1. Dual LED waterproof button, left click on microphone, right click on electric whistle. ◆ 2. With status indicator light. ◆ 3. Use waterproof PVC casing and special waterproof and anti-corrosion cables. ◆ 4. It is applicable to the national Para swimming competition.

2.4 Main Control Cable

Products	Details
Main Control Cable	Type：KS-SZ-CA ◆ Waterproof and corrosion-resistant specialized cables, capable of transmitting speaker signals, touch plate signals, relay departure judgment signal, blind meter A/blind meter B/blind meter C signals.

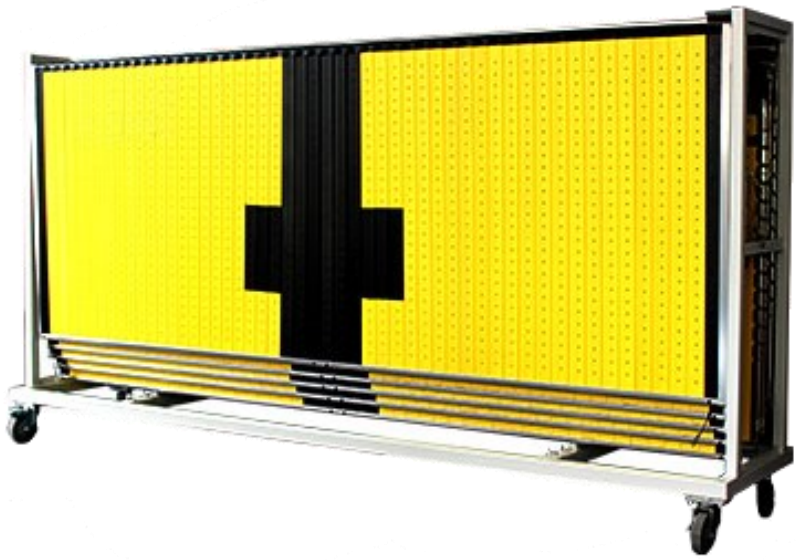
2.5 Touchpad

Products	Details
Touchpad	Type： KS-SW2400PRO Size： 2400(Length)*900(width)*7.6(thickness)mm ◆ 1. Meet the requirements of FINA and Chinese Swimming Association. ◆ 2. There are no blind spots on the surface of the entire touchpad; The surface of the PVC panel is perforated to increase friction. ◆ 3. Made of all plastic (PVC), with a surface coated with anti slip coating. ◆ 4. Rear pressure sensor, triggering force greater than 2KG. ◆ 5. Equipped with dedicated fixing parts, made of SUS304 stainless steel material. ◆ 6. During relay competitions, there are departure reaction time and segmented timing. ◆ 7. When used in backstroke competitions, there is a starting reaction. ◆ 8. When used in competitions over 50m, there is a segmented timing. ◆ 9. Customers can customize other sizes of touchpads: 2400, 2000, 1800, 1600.



2.6 Touchpad Cart

Products	Details
Touchpad Cart	Type： KS-SZ-SW2400PRO Weight: 17.5kg Material： Aluminum Stainless Steel ◆ Capable of loading 10 standard touchplates, made of SUS stainless steel rust proof overall, with four wheel locking devices, and a dedicated strap for touchplate transportation.



2.7 Backup Grip Switch

Products	Details
Touchpad Storage Bracket	Type：KS-SZ-W ◆ 1. The standard configuration is 3 sets per lane, with three different numbers for different judges to use. ◆ 2. Adopting medical grade silicone spring wire, it is lightweight and has a good feel. ◆ 3. The straight plug design is easy to use. ◆ 4. Customized mold opening using French proprietary buttons, durable, waterproof and corrosion-resistant

2.8 Decoding Module

Products	Details
Decoding Module	Type：KS-SZ-SP Built in IoT data module, real-time monitoring of the working status of touchpads, blind meters, and relay departure judges, and reflecting the hardware working status through data and optoelectronic forms. Integrating swimlane control and speaker functions. ◆ 1. Transmission interface: speaker interface, touchpad interface, relay departure judgment device interface, blind meter A/B/C interface, and with anti fooling function to prevent incorrect insertion. ◆ 2. Install dedicated indicator lights for disability competitions. ◆ 3. Waterproof, moisture-proof, and corrosion-resistant. ◆ 4. Can modify the data terminal ID (modify the speaker corresponding to the swimlane number) ◆ 5. Equipped with device fault prompt function.

2.9 External Relay Error Sensor

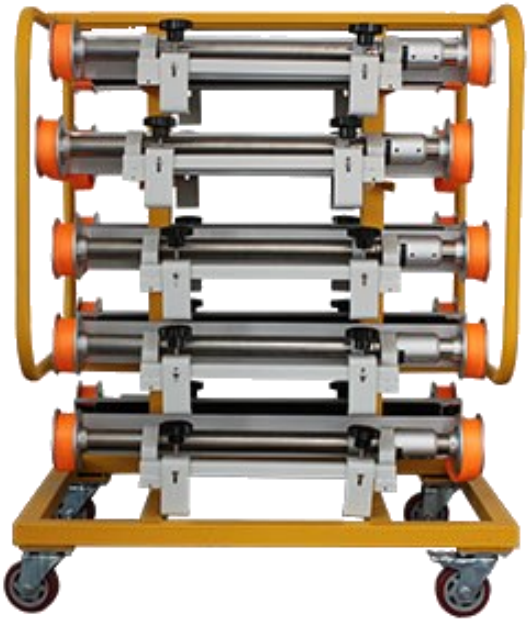
Products	Details
External Relay Error Sensor	Type：KS-ST3 ◆ 1. Provide athletes' starting reaction and relay competition handover time, accurate to 0.001 seconds. ◆ 2. Quick installation design, can be installed on any departure platform without the use of any tools. ◆ 3. The surface color can be customized according to customer needs. ◆ 4. The stainless steel support surface is processed with high-precision CNC aluminum plate surface to achieve high friction without touching the feet.

2.10 Backstroke Ledge

Products	Details
Backstroke Ledge	Type：KS-Y20 Specification and size: 80 (length) * 18 (width) * 15 (height) Weight: 6kg; ◆ 1. Adopting new principles and structural design, it can be installed and disassembled without relying on any tools. ◆ 2. Adopting digital gear adjustment, it can easily and intuitively change gears and display gears. There are a total of 9 gears:+4,+3,+2,+1, 0, -1, -2, -3, -4, which are intuitive and clear. ◆ 3. Suitable for any starting platform and does not need to be disassembled during competition, which does not affect the normal use of the diving platform. ◆ 4. It adopts a trapezoidal structure and palm pattern, with high friction and comfortable pedaling, and good anti slip performance.

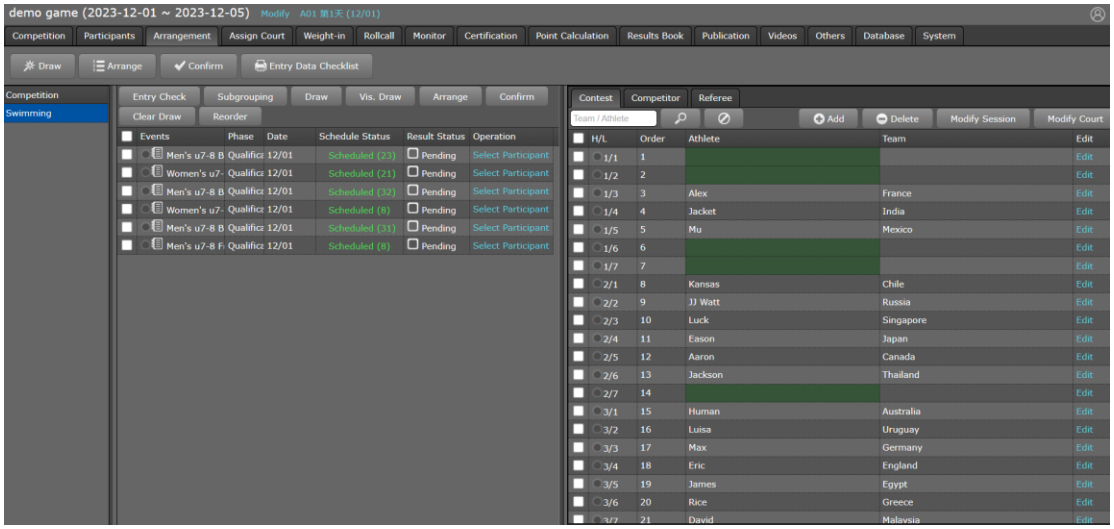
2.11 Backstroke Ledge Cart

Products	Details
Backstroke Ledge Cart	Type：KS-Y20-10 ◆ It can load 10 standard backstroke starters, made of overall metal spray molding, with four wheel locking devices and dedicated transport straps.



2.12 Meet Management Software

Products	Details
Meet Management Server	Type: KS-MMS-MINI Size: 260x135x35 (mm) Weight: 1.0 KG Input Voltage: 12V DC RAM: 4GB CPU: Intel J3160 Hard Disk: 64G Communication: LAN*1 Port: VGA*1, DP*1，USB*2 Support: Swimming Features: ◆ Easy to create a match, and import the match entry information. ◆ Arrangement the match with variants of game systems. Including elimination, round-robin, etc. ◆ Provide the match information to the scoring software on each venue/court. ◆ Gather the real time score and statistics information from the scoring software. Monitor the progress of the match. ◆ Generate standard reports for the match, including start-list, results, combined results, ranking, etc. ◆ Print certifications with adjustable print templates. ◆ Print the team score report. ◆ Open interface with ODF compatible data feed.


demo game (2023-12-01 ~ 2023-12-05)
Modify
A01 第1天 (12/01)
Competition
Participants
Arrangement
Assign Court
Weight-in
Rollcall
Monitor
Certification
Point Calculation
Results Book
Publication
Videos
Others
Database
System
Draw
Arrange
Confirm
Entry Data Checklist
Competition
Swimming
Entry Check
Subgrouping
Draw
Vis. Draw
Arrange
Confirm
Clear Draw
Reorder
Events
Phase
Date
Schedule Status
Result Status
Operation
Men's u7-8 B
Qualifica
12/01
Scheduled (23)
Pending
Select Participant
Women's u7-
Qualifica
12/01
Scheduled (21)
Pending
Select Participant
Men's u7-8 B
Qualifica
12/01
Scheduled (32)
Pending
Select Participant
Women's u7-
Qualifica
12/01
Scheduled (8)
Pending
Select Participant
Men's u7-8 B
Qualifica
12/01
Scheduled (31)
Pending
Select Participant
Men's u7-8 F
Qualifica
12/01
Scheduled (8)
Pending
Select Participant
Contest
Competitor
Referee
Team / Athlete
Add
Delete
Modify Session
Modify Court
H/L
Order
Athlete
Team
Edit
1/1 1
1/2 2
1/3 3 Alex France
1/4 4 Jacket India
1/5 5 Mu Mexico
1/6 6
1/7 7
2/1 8 Kansas Chile
2/2 9 JJ Watt Russia
2/3 10 Luck Singapore
2/4 11 Eason Japan
2/5 12 Aaron Canada
2/6 13 Jackson Thailand
2/7 14
3/1 15 Human Australia
3/2 16 Luisa Uruguay
3/3 17 Max Germany
3/4 18 Eric England
3/5 19 James Egypt
3/6 20 Rice Greece
3/7 21 David Malaysia