



Scoring & Timing Solution for Badminton



1. Introduction

This is a professional solution for LED scoreboard display in badminton stadiums.

Mainly for large-scale badminton matches which held in professional sports venues.

The system functions conform to BWF rules.

Match arrangement, real-time scoring & timing display, players' & referees' info display, rank statistics export & print, slow motion video record & playback, and advertising display can be realized through the coordination of Match Scoring System, Meet Management System, Video Arbitration System, etc.

It is an ideal choice for most of smart and professional stadiums.

2019, the 27th China-Japan-Korea Junior Sports Exchange Meet



1.1 System Architecture

The whole system is composed of several subsystems, including: Match Scoring System and Meet Management System.

Each subsystem can not only work independently, but also work together to share the data.

It is flexible for customers to configure according to the actual application.

- **Match Scoring System**

Match Scoring System named ULTRA SCORE is composed of Ultra Score Software, Match Scoring & Timing Host, Referee Scoring & Timing Terminal, Shot Clock, Backboard Light, Possession Display, Foul Display, Electronic Buzzer, Electronic Whistle Timing System, etc.

It is mainly operated by the referees to realize the scoring and timing work and real-time scoreboard display.

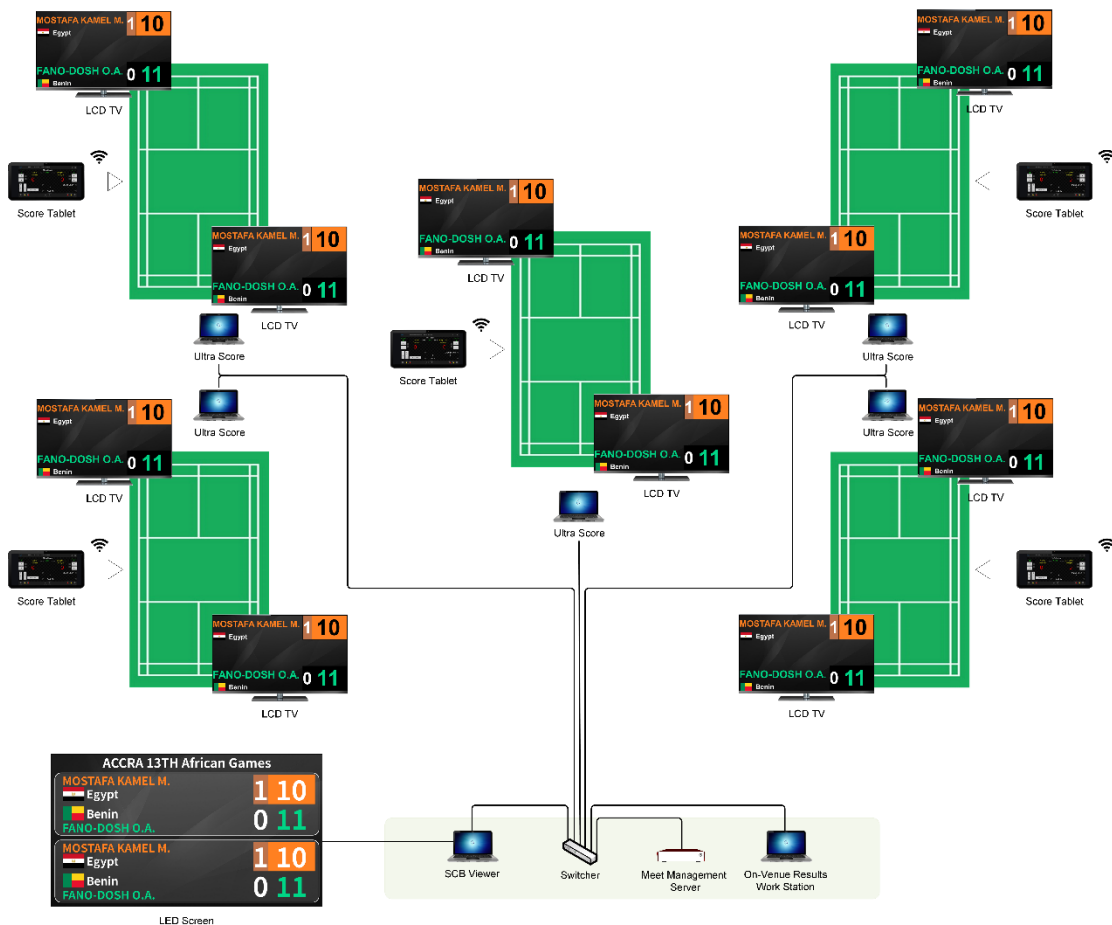
The system functions conform to FIBA, CBA, FIBA 3V3 and NBA rules.

- **Meet Management System**

It is composed of Meet Management Server, On-Venue Results Workstation, Printer, etc.

Linking with Online Registration System, Match Scoring System and Basketball Stats System, it can realize: participants management, match schedule, result management, technical statistics, court arrangement, rank statistics, etc.

1.2 System Chart



System Description

- 1) The system has the functions of scoring, timing and displaying in the mode of one court and multi courts.
- 2) It supports tournament schedule and result exporting.
- 3) In every court, one set of score tablet, ultra score software and LCD TV shall be equipped to manage and display the information of the score, players and sets.
- 4) The score information of every court will be gathered to display on the LED screen at the same time.

1.3 Features

- (1) Scoring functions: Display the current score and the set score.
- (2) Professional scoreboard display: Scoring and timing operation, layout of scoreboard can meet international game rules.
- (3) Match management: Information of match, team and team members can be saved in advance. And referee's scoring operation during the match can be recorded and output.
- (4) Convenient operation feeling: Referees can do operation on a special score console as well as by using shortcuts on the keyboard.
- (5) Powerful media player: Kinds of media formats are supported. It is easy to switch between the scoreboard and video.
- (6) Notification: Rolling to display short notice on the screen which allows to set the speed, colors, fonts freely.
- (7) Customization: All contents on the scoreboard including fonts, color and layout can be modified to meet clients' needs.
- (8) Self-adaptation: With easy configuration, score information can be displayed on kinds of LED and LCD screen by using this system which can adjust the layout to meet any sizes of screen.
- (9) Security: Auto backup function will help you recover the match immediately from the computer fault.

1.4 Product Configuration (for one court)

Product	Type	Qt.
Ultra Score Software	ULTRASCORE STANDALONE	1
Score Display Software	ULTRASCORE VIEWER	1
Wireless Score Tablet	KS-GC14-I8	1
Meet Management Server	KS-MMS-MINI	1
LCD TV	48inch LCD	1
TV Brackets	/	1
Switcher	TP-Link	1
Router	TP-Link	1
Printer	HP	1
PC	Dell	3

2. Specification for products

2.1 Ultra Score Software

Products	Details
Ultra Score Software	<ul style="list-style-type: none">◆ Type: ULTRASCORE STANDALONE◆ Supports: Badminton◆ Including 1 dongle◆ Match management, scoring, and media display functions, all in one installed on a PC. Referee must do operation on the PC for display directly.

Screen Display:

The screenshot displays a badminton match score. The top player is Mostafa Kamel M. from Egypt, with a score of 10. The bottom player is Fano-Dosh O.A. from Benin, with a score of 11. The scores are shown in large, bold numbers on the right side of the display. The player names and nationalities are shown on the left side of the display.

Player Name	Nationality	Score
MOSTAFA KAMEL M.	Egypt	10
FANO-DOSH O.A.	Benin	11

2.2 Score Display Software

Products	Details
Score Display Software	<ul style="list-style-type: none">◆ Type: ULTRASCORE VIEWER◆ Support: Badminton◆ Display the current score and the set score of single court.◆ Summary display the current score and the set score of multi courts.

Multi courts display:

ACCRA 13TH African Games

MOSTAFA KAMEL M.
Egypt
1 10

FANO-DOSH O.A.
Benin
0 11

MOSTAFA KAMEL M.
Egypt
1 10

FANO-DOSH O.A.
Benin
0 11

2.3 Wireless Score Tablet

Products	Details
<p>Wireless Score Tablet</p>	<p>Type: KS-GC14-I8</p> <ul style="list-style-type: none"> ◆ Including one license of Lightscore software ◆ Screen: 8"inch ◆ Size: 211*126*9.2 (mm) ◆ Pixel: 1280*800IPS ◆ Ram: 4GB ◆ Storage: 64GB ◆ System: Android ◆ Supports: Badminton ◆ Communication: WIFI ◆ Full colored touch screen ◆ Easy score operation by touching screen. ◆ Must work with Ultra Score software.



2.4 Meet Management Server

Products	Details
Meet Management Server	<p>Type: KS-MMS-MINI Size: 260*135*35 (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</p> <p>Features:</p> <ul style="list-style-type: none">● Multi-court arrangement, auto generate the order form.● Multi-project arrangement, make the schedule more smoothly.● Monitor the status of each court in real time, including the current field, rotation and player info.● Court adjustment, can manually modify the match court and session info.● Summary and print integrated report.



2.5 Video Arbitration System

Video Arbitration System named PARROT is composed of video arbitration server, control panel and cameras.

It is operated by the referee during the match. When working with Match Scoring System, referee's score operation will be marked on the frame of video automatically, whilst playback them in slow motion with changes in speed.

It can be used to provide the technical support when dispute happens during the match so as to reduce the misjudging, to ensure fairness and justice of the match.

Application:

Basketball, Volleyball, Football, Tennis, Handball, Boxing, Wrestling, Wushu, Judo, Jujitsu, Karate, Taekwondo, Gymnastics, Swimming, Diving, Ice-hockey, Weightlifting, etc.



2.5.1 System Description

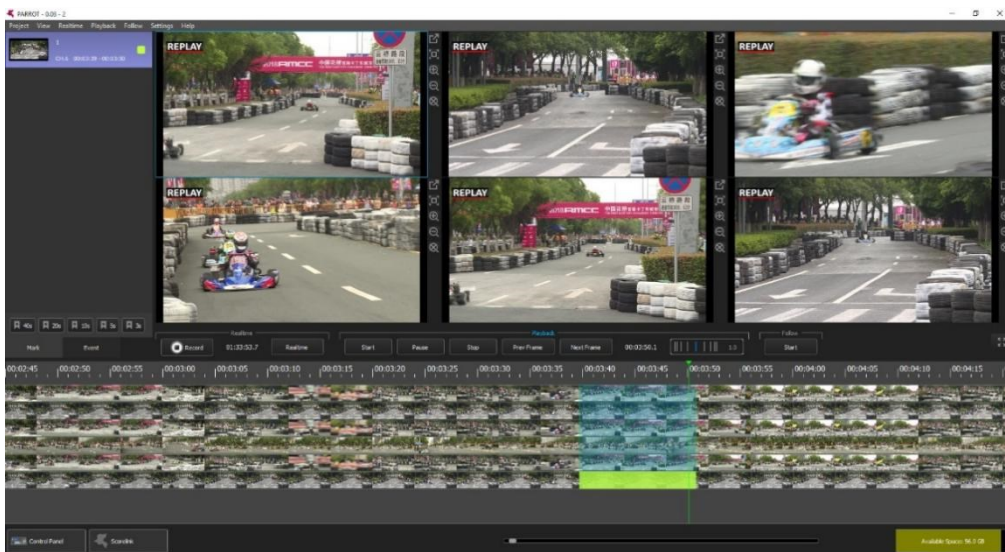
- 1) Ultra Score software is installed on the control computer. Connect the control computer and the video arbitration server to the local network.
- 2) 1-8 sets of HD cameras are installed around the count which connects to video arbitration server via SDI cable.
- 3) Control panel is connected to video arbitration server via a USB cable which makes referee easy to check the playback process and control the speed of slow motion.
- 4) Video arbitration server provides an output video signal which can be connected to LED/LCD display for live slow motion replay.

2.5.2 Functions

- 1) **Nonstop video recording in the background:** 1-8 channels of HD video are recorded simultaneously in the background, nonstop for 10 hours. Video retrieval and playback is unaffected.
- 2) **Synch-playback of multi-channel video:** Supports playback mode of single channel video in full screen and multi-angle video in 6 windows.
- 3) **Speed change in slow motion:** supports 20 frame/s video playback and capturing motion in a grid of 0.05s. The function of frame freeze, fast playback, 1/2 slow playback, 1/4 slow playback and dragging progress bar is available.
- 4) **Video event query:** video stream can be divided into several video events, storing in the event list, which can be renamed for retrieve easily.
- 5) **Video segment marker:** Important or controversial moments can be marked in video stream which will be replayed quickly when clicking the marked records.
- 6) **Professional playback control panel:** configuring T-bar, slow moving wheel, speed preset function keys to make the process more convenient.
- 7) **Video signal output:** provides 2 video output signals, one of which is for preview, the other of which can be connected to LED/LCD display for live slow motion replay.

Working with Ultra Score System to realize:

- 1) **Auto generate video event:** Video events will be generated automatically for quick query according to the match data that has been preset in Ultra Score.
- 2) Real-time match timer will be superimposed on the video.
- 3) **Referee's operation record:** Referee's every scoring and timing operation can be recorded into the video, showed below the frame when that moment happened.
- 4) **Player's point record:** Player's point can be recorded into the video, showed below the frame when that moment happened.
- 5) **Open developer API:** Just connect your own scoring system onto this Video Arbitration System, so you may record all kinds of events together with the videos.



2.5.3 Video Arbitration Server (up to 8 channels record and replay)



Detailed parameter

Item	Details	Item	Details
Product	Video Arbitration Server	Type	KS-PARROT-2C/4C/6C/8C
Input Voltage	AC 100~240V	Power	35W
Size	483x430x90mm (2U)	CPU	Intel I7
RAM	2 channels: 8GB 4/6/8 channels: 16GB	Hard Disk	2/4 channels: 800GB 6/8 channels: 2T
Input	SDI×2/4/6/8	Communication Port	LAN×2
Output	DP×2	Other Port	USB×4
Packing List	Host*1, Power cable*1, User manual*1		
Functions	<ol style="list-style-type: none"> 1. Nonstop video recording in the background for 10 hours. Video retrieval and playback is unaffected. 2. Support 50 frame/s video playback and capturing motion in a grid of 0.02s. 3. Support playback the video of the specified channel frame by frame, or at a set speed continuously. 4. Important or controversial moments can be marked manually or auto create video marks by linkage with Ultra Score System. 5. Zoom the playback screen of any channel to accurately observe the details. 6. Provide 2 video output signals, one of which is for preview, the other of which can be connected to LED/LCD display for live slow motion replay. 7. Working with Ultra Score System can realize real-time match data displaying on the video. 8. Automatically synchronize with the match and tag the video, so as to provide convenience to find the match sessions or sets. 9. Each single operation of the referees will be recorded together with the videos. 10. Unique "Follow" mode, automatically replay the most recent screen with a 5-second delay to help the referee make decisions quickly. 11. Open external control interface which can be controlled by 3rd-part system. 		

2.6 Control Panel



Detailed parameters

Item	Details	Item	Details
Product	Control Panel	Type	KS-PARROT-CP
Input Voltage	AC 100~240V	Net weight	1KG
Size	365 x 200 x 98 (mm)	Power	15W
Communication Port	USB×1, RS232×1	Display	Color LCD (4.3Inch)
Packing List	Host* 1, Power Cable*1, USB Cable*1, User Manual*1		
Functions	<ol style="list-style-type: none"> 1. Support one touch replay, deferred replay, in/out replay. 2. Preset speed button. 3. T-Bar for dynamic slow motion. 4. Professional dynamic jog wheel. 5. Key to mark the last 10s/20s of the video content. 6. Flexible select the marked video and playback. 		

2.7 HD Camera



Detailed parameters

Product Type	KS-PARROT-CAMERA
Video output	3G-SDI
Effective pixels	3.0 million
Max Resolution	1920*1080
Max Frame rate	60FPS
Sensor	CMOS
Focal length	4.2MM
Size	62.5*50*50MM