

# WORLD TAEKWONDO

## *Technology Manual*

### *WT Promoted Competitions*



Produced by  
World Taekwondo  
MSI, Avenue de Rhodanie 54,  
1007 Lausanne Switzerland

Version: 1.0 (August 2017)  
Version 1.1 (June 2018)  
Version 1.2 (June 2019)  
Version 1.3 (November 2020)  
**Version 1.4 (March 2021)**

Copyright: © 2021 World Taekwondo (WT) This document is the property of WT and the information contained herein is confidential. This work, either in whole or in part, must not be reproduced or disclosed to others or used for purposes other than that for which it is supplied, without WT's prior written permission, or if any part here of is furnished by virtue of a contract with a third party, as expressly authorized under that contract. WT must not be considered liable for any mistake or omission in the edition of this document.

## TABLE OF CONTENTS

<b>1. INTRODUCTION .....</b>	<b>4</b>
1.1 THIS DOCUMENT .....	4
1.2 OBJECTIVE .....	4
1.3 MAIN AUDIENCE .....	4
1.4 GLOSSARY.....	5
<b>2. TECHNOLOGY RESOURCES AND SERVICES FOR WT COMPETITIONS: .....</b>	<b>6</b>
2.1 ON VENUE RESULT (OVR) .....	6
2.2 PROTECTOR SCORING SYSTEM (PSS) .....	7
2.3 INSTANT VIDEO REPLAY (IVR).....	9
2.4 TV GRAPHICS (TVG) .....	11
2.5 PRODUCTION COMPANY FOR LED WALL AND JUMBO SCREEN .....	13
2.6 NETWORK TECHNICIAN .....	14
2.7 POWER TECHNICIAN .....	14
<b>3. OPERATION TIME TABLE .....</b>	<b>15</b>
3.1 VENUE AND FOP SET-UP.....	15
<b>4. FIELD OF PLAY (FOP) SHAPE .....</b>	<b>17</b>
4.1 MAT SIZE AND SPECIFICATIONS .....	17
4.2 PLATFORM SHAPE .....	19
4.3 ONE LINE SHAPE.....	20
4.4 PARTICIPANT PATHWAY AND AREA LOCATION .....	21
<b>5. COMPETITION FUNCTIONAL AREAS.....</b>	<b>22</b>
5.1 WARMING UP AREA.....	22
5.2 INSPECTION DESK AND EQUIPMENT AREA .....	23
5.3 PSS TESTING AND REGISTRATION.....	25
5.4 CALL ROOM.....	26
5.5 STORAGE .....	27

5.6 MEDIA TRIBUNE:.....	27
5.6 REFEREE ROOM: .....	28
<b>6. TECHNOLOGY AND SET UP .....</b>	<b>29</b>
6.1 SCOREBOARD.....	29
6.2 FOP PUBLIC SCOREBOARD.....	32
6.3 NETWORK AND INTERNET .....	37
6.4 POWER AND ELECTRICITY.....	39
<b>7. CONCLUSION .....</b>	<b>40</b>

## 1. INTRODUCTION

### 1.1 THIS DOCUMENT

This document delivers all the necessary explanations and technological requirements to prepare the field of play for World Taekwondo Promoted competitions.

The organising committee has to work closely with the WT and the service providers to deliver smooth and safe operations.

### 1.2 OBJECTIVE

The technology manual will guide the local organizing committee to deliver in coordination with World Taekwondo the WT requirements for setup of the WT promoted competitions.

The purpose of the technology manual is as follows:

- Explain and guide the LOC (Local organizing committee) on technology standards required for World Taekwondo promoted events.
- Provide the equipment list which the LOC has to deliver to run a smooth and safe competition.
- Show in detail the setup expected from World Taekwondo for promoted tournaments.

### 1.3 MAIN AUDIENCE

The main audience of this document is:

- Competition manager
- Venue manager
- Technical providers

---

## 1.4 GLOSSARY

WT: World Taekwondo

OVR: On venue results

PSS: Protector scoring system

IVR: Instant video replay

TVG: TV Graphics

UPS: Uninterruptible power supply

LOC: Local organising committee

RTDS: Real time display service

GMS: Global membership system

IT: Information technology

FOP: Field of play

LED: Light emitting diode

## 2. TECHNOLOGY RESOURCES AND SERVICES FOR WT COMPETITIONS:

### 2.1 ON VENUE RESULT (OVR)

#### **A - Description:**

The On-venue result system is the data operation center for the competition. Also named competition management system, the OVR centralizes and distributes the entries, schedules, results and reports of the competition.

The main functions are:

- Import the registration using WT protocol from WT GMS.
- Operate the drawing of lots run visual support for the head of team meeting.
- Process the weigh-in results, deliver the pool lists and match sessions.
- Run the competition schedules and competition management during the tournament.
- Display the competition progress (RTDS and scoreboard) in the venue and to the Web.
- Connect and exchange data with the others technology systems.
- Edit, deliver and export using the WT protocols the competition results.

#### **B – Selection process**

The OVR has to be contracted by the LOC.

The local organizing committee has to select an OVR provider under the list specified by World Taekwondo.

The list is available on the WT Website at the following link:

[http://www.worldtaekwondo.org/wtpartners-wt/wt\\_compliant\\_com.html](http://www.worldtaekwondo.org/wtpartners-wt/wt_compliant_com.html)

#### **C – OVR Equipment:**

The OVR provider should provide the main system and the back-up.

Additionally, the LOC should provide:

- 7 Laptops and 5 TV monitors for RTDS and scoreboard<sup>1</sup>.

---

<sup>1</sup> Refer to part 5.1, 5.2, 5.3, 6.1 and 6.2

- 1 Copier + copies
- 2 Printers + copies
- Local network<sup>2</sup>
- 1 UPS<sup>3</sup>
- 1 TV + HDMI cable must be available for Referee assignment.

## 2.2 PROTECTOR SCORING SYSTEM (PSS)

### A – Description:

The PSS was introduced in 2009 by WT in order to increase the transparency for Taekwondo competitions. In 2009 PSS was called EBP (Electronic body protector).

The PSS company provides the scoring system for the competition.



<sup>2</sup> Refer to part 6.3

<sup>3</sup> Refer to part 6.4

## B - Selection process:



The two companies are currently recognized by World Taekwondo.

The choice of the company for the Protector scoring system is previously communicated by the Sport department to the LOC.

## C - PSS equipment:

The PSS company is responsible for providing the required necessary equipment for timing and scoring.

- Electronic trunk protectors
- Electronic head protectors
- Transmitters and receivers
- Joysticks and cables
- Electronic foot protectors (Athletes).
- 1 laptop per area + 1 back up

## D - Delivery and transportation:

The custom clearance or temporary importation must be arranged previously between the LOC and the PSS company.

The equipment should be onsite at the venue 3 days prior to the first competition day.

If the PSS technicians are carrying the equipment with them, a dedicated transportation should wait for them at the airport.

**Contact:** KPNP: [kpnpsales@daum.net](mailto:kpnpsales@daum.net) Daedo: [marketing@daedo.com](mailto:marketing@daedo.com) cc: [IT@worldtaekwondo.org](mailto:IT@worldtaekwondo.org) , [sport@worldtaekwondo.org](mailto:sport@worldtaekwondo.org)



## 2.3 INSTANT VIDEO REPLAY (IVR)



Instant video replay station 2018 World Taekwondo Junior Championships

### 2.3.1 - Instant video replay:

#### A - Description:

The instant video replay was introduced in 2009 in order to increase the transparency for Taekwondo competitions.

The system includes all the necessary hardware to run the system.

The video system is also used as competition official back up in case of protest.

#### B – Selection process<sup>4</sup>:

The instant video replay is provided by the World Taekwondo.

Due to the high specifications, the World Taekwondo brings his own equipment and provides the maintenance during the competition.

#### C – Equipment:

All the specific equipment such as cameras, tripods, controllers, converters and cables are brought by WT to the event.

**The LOC should provide 2 monitors with HDMI input (Between 19inch and 21inch) per mat.**

---

<sup>4</sup> Budget and process described in the Operation manual

## **D – Volunteers:**

To improve the video production and the video quality for the review jury, 1 volunteer is required for each camera.

**Contact:** [IT@worldtaekwondo.org](mailto:IT@worldtaekwondo.org) ,

## **2.3.2 - 4D replay system:**



### **A - Description:**

The 4D replay is a technology which replay the video with 360 degrees navigation effect. It's has been introduced by World Taekwondo since 2019 Manchester World Taekwondo Championships.

The system shall be used for the competitions above G12 category.

The 4D replay is set-up on 1 court where the Semi-finals and Finals are taking place.

### **B – Selection process:**

The 4D replay is delived by 4D replay company.

Please contact SEM Department in order to get in touch with the provider.

The cost of 4D replay is at charge of the LOC.

**Contact:** [Sport@worldtaekwondo.org](mailto:Sport@worldtaekwondo.org)

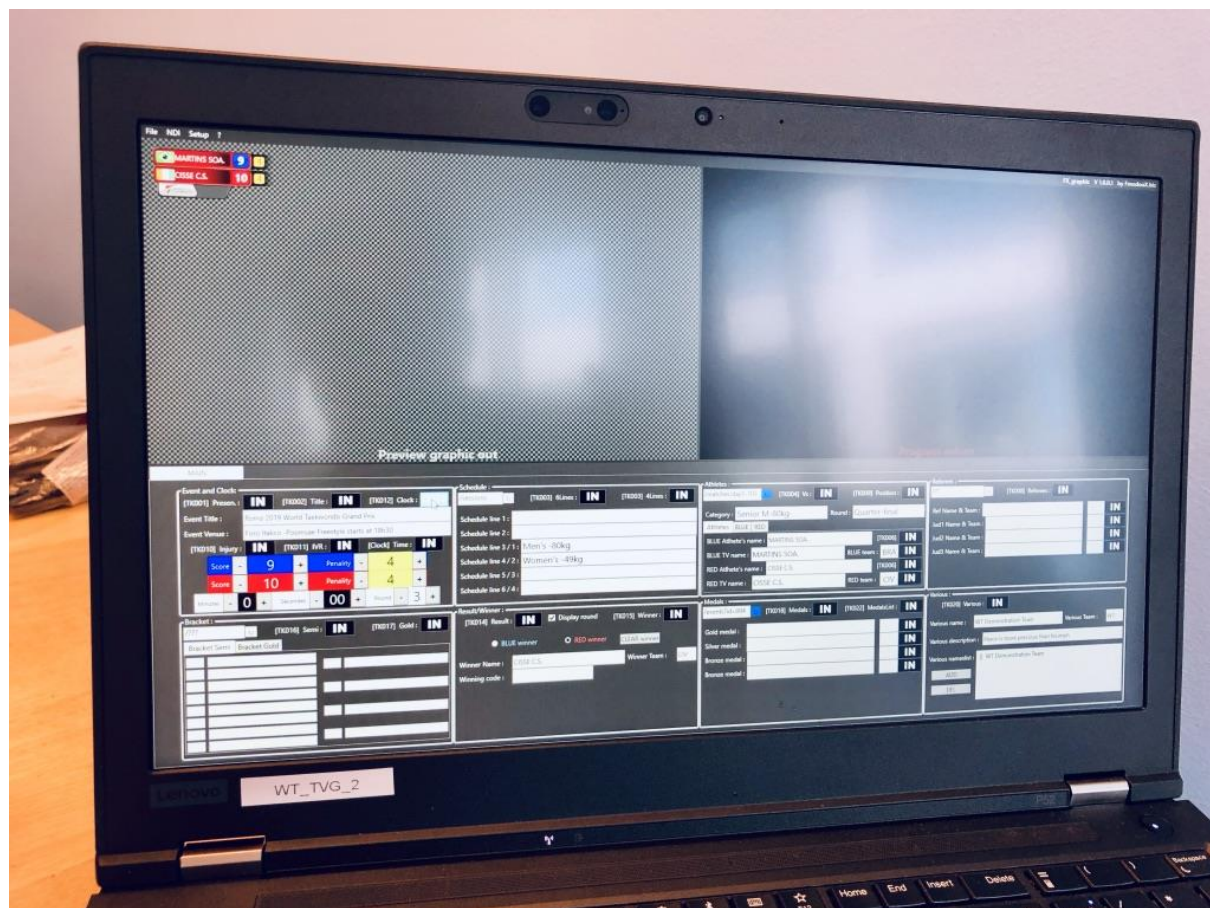
### **C – Equipment:**

All the equipment and set-up is provided by the 4D replay company.

## 2.4 TV GRAPHICS (TVG)

### A - Description:

The TV graphics is the provider connected to the OVR and the PSS which delivers the graphics for timing, scoring and match information to TV broadcasters. The system is fully synchronized and connected with the OVR and PSS providers.



### B – Selection process<sup>5</sup>:

The TVG service is provided by World Taekwondo.

### C – Equipment and specifications:

The broadcasters and the LOC must provide the following equipment.

The main system and software are provided by WT:

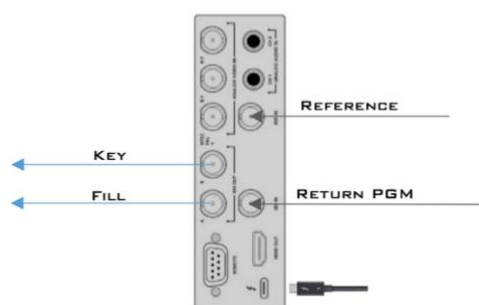
- 1 UPS<sup>6</sup> with power

<sup>5</sup> Budget and process described in the Operation manual

<sup>6</sup> Refer to part 6.4

- 1 BNC cable Fill
- 1 BNC cable Key
- 1 Reference
- 1 Dirty feed
- 1 intercom linked with the OB van.

The broadcaster must provide following cables to the TVG location at the operation table.



Contact: [IT@worldtaekwondo.org](mailto:IT@worldtaekwondo.org)

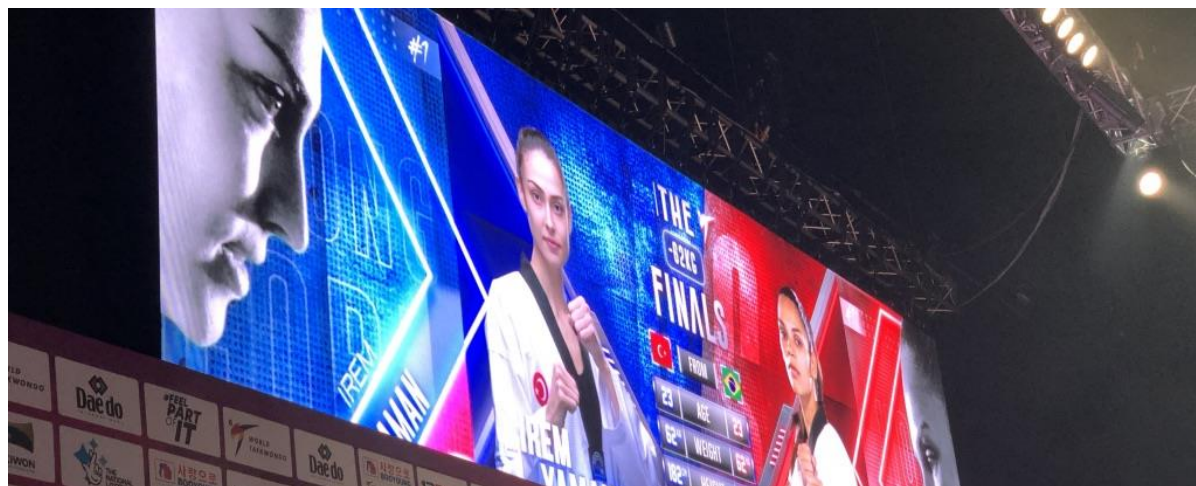


## 2.5 PRODUCTION COMPANY FOR LED WALL AND JUMBO SCREEN

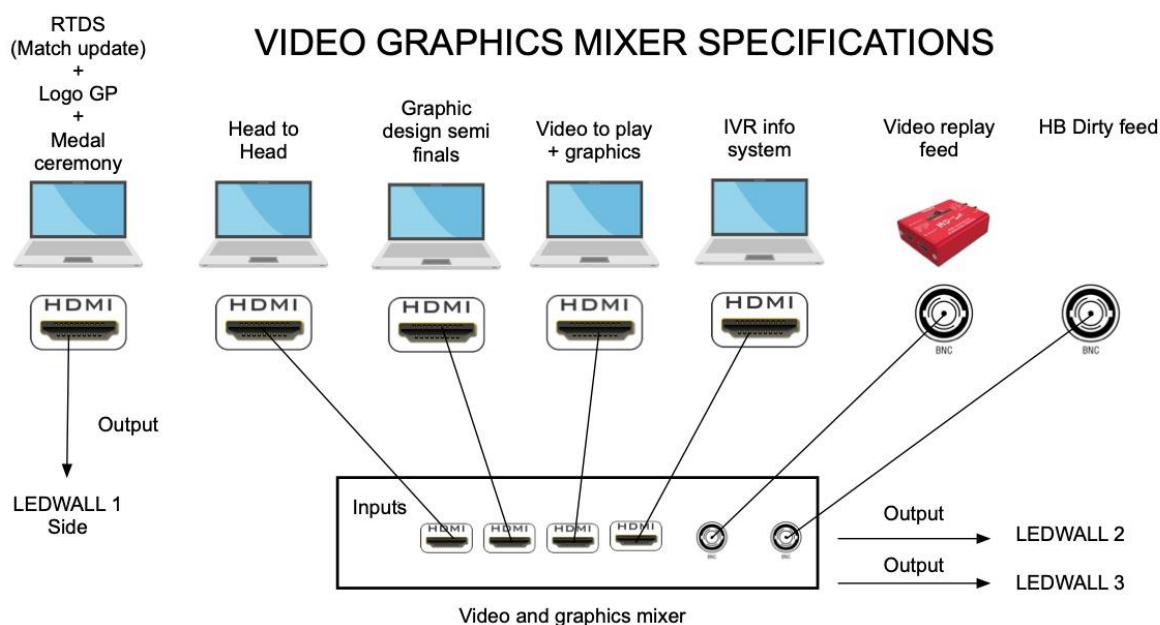
### A – Description:

The production company is responsible for the LED panels, LED walls, light and sound during the competition.

The production company should have all the necessary equipment to play video and music during the competition following the WT recommendations.



*LED Wall Manchester 2019 World Taekwondo Championships*



- For all the HDMI output we will try to place the laptop near by the mixer. Cable from 2m to 5m will be needed to connect all the laptops.
- Production company has to provide a BNC coaxial cable to the table in front of the central mat with HDMI to HDSDI converter.
- For the dirty feed it might come from the OB Van or any outputs having the dirty feed on the FOP.

**B – Selection process:**

The production company should be selected by the LOC.

The selection should be done following the WT technical requirements<sup>7</sup>.

Please refer to TV manual for light requirements.

---

**2.6 NETWORK TECHNICIAN****A – Description:**

The network technician is responsible for building the local network on FOP and to provide internet connection. The network technician should follow the WT technical requirements<sup>8</sup>.

**B – Selection process:**

The network technician should be chosen and contracted by OC.

The network technician should be available and finish the network set-up 2 days before the competition starts.

The network technician should stay during all the competition in case of any network issues.

He should be able to contact the venue administrator to control the wireless environment following WT recommendation.

---

**2.7 POWER TECHNICIAN****A – Description:**

The power technician is responsible for installing and providing safe and compliant power supply for the field of play and functional areas<sup>9</sup>.

The power technician should ensure enough power in watts for all the different areas.

The LOC is responsible for providing the correct number of sockets and materials needed as UPS.

**B – Selection process:**

The power technician is under the LOC's responsibility.

He could be staff of the venue or directly managed by the production company.

---

<sup>7</sup> Refer to parts 6.1 and 6.2

<sup>8</sup> Refer to part 6.3

<sup>9</sup> Refer to the part 6.4

### 3. OPERATION TIME TABLE

#### 3.1 VENUE AND FOP SET-UP

##### A – World Championships

Provider	Items	Arrival	Finish tasks
	<b>MEETING with LOC, Light and sound company, network technician, power technician, equipment company, Games Chairman and WT IT Manager</b>		6 days before
Light company	Light and sound (Important to finish to allow other part to build the FOP)		6 days before
LOC	Platform for mats (If required)		5 days before
LOC	Platform (Operation table, Judges, Awarding ceremony...)		5 days before
LOC	Mats	7 days before	5 days before
LOC	TA and Operation table		5 days before
PSS	Arrival PSS provider		4 days before
OVR	Arrival OVR provider		4 days before
LED and Jumbo screen company	Set-up LED panel and jumbo screen		4 days before
LOC and Power supply	Set-up Power board and power socket		4 days before
LOC and Network	Set-up Switch, cables and internet		4 days before
LOC and equipment	Set-up TV for scoring and cables for display		4 days before
PSS provider	Full system configured, Wi-Fi check, cables for joysticks	4 days before	3 days before
OVR provider	Main and back-up + all RTDS ready	4 days before	3 days before
Instant video replay	Full system + display		3 days before
TV Graphics	Set-up and testing	3 days before	2 days before
LOC (Design)	TA table boxes, Coach Boxes and Operation table banner		3 days before
LOC (Design)	Carpet and branding		When set up completed
ALL	Full rehearsal and testing		2 last days, full days

## B – Grand Prix

Provider	Items	Arrival	Finish tasks
	<b>MEETING with OC, Light and sound company, network technician, power technician, equipment company and WT IT Manager</b>		5 days before
Light company	Light and sound (Important to finish to allow other part to build the FOP)		4 days before
LOC	Platform for mats (If required)		4 days before
LOC	Platform (Operation table, Judges, Awarding ceremony...)		4 days before
PSS	Arrival PSS provider		4 days before
OVR	Arrival OVR provider		4 days before
LOC	Mats		3 days before
LOC	TA and Operation table		3 days before
LED and Jumbo screen company	Set-up LED panel and jumbo screen		3 days before
LOC and Power supply	Set-up power board and power socket		3 days before
LOC and Network	Set-up switch, cables and internet		3 days before
LOC and equipment	TV for scoring and cables for display		3 days before
PSS provider	Full system configured, Wi-Fi check, cables for joysticks	3 days before	2 full days before
OVR provider	Main and back-up + all RTDS ready	3 days before	2 days before
Instant video replay	Full system + display		2 days before
TV Graphics	Set-up and testing		2 days before
LOC (Design)	TA table boxes, Coach Boxes and Operation table banner		2 days before
LOC (Design)	Carpet and branding		When set up completed
ALL	Full rehearsal and testing		Last day, 1 full day



## 4. FIELD OF PLAY (FOP) SHAPE

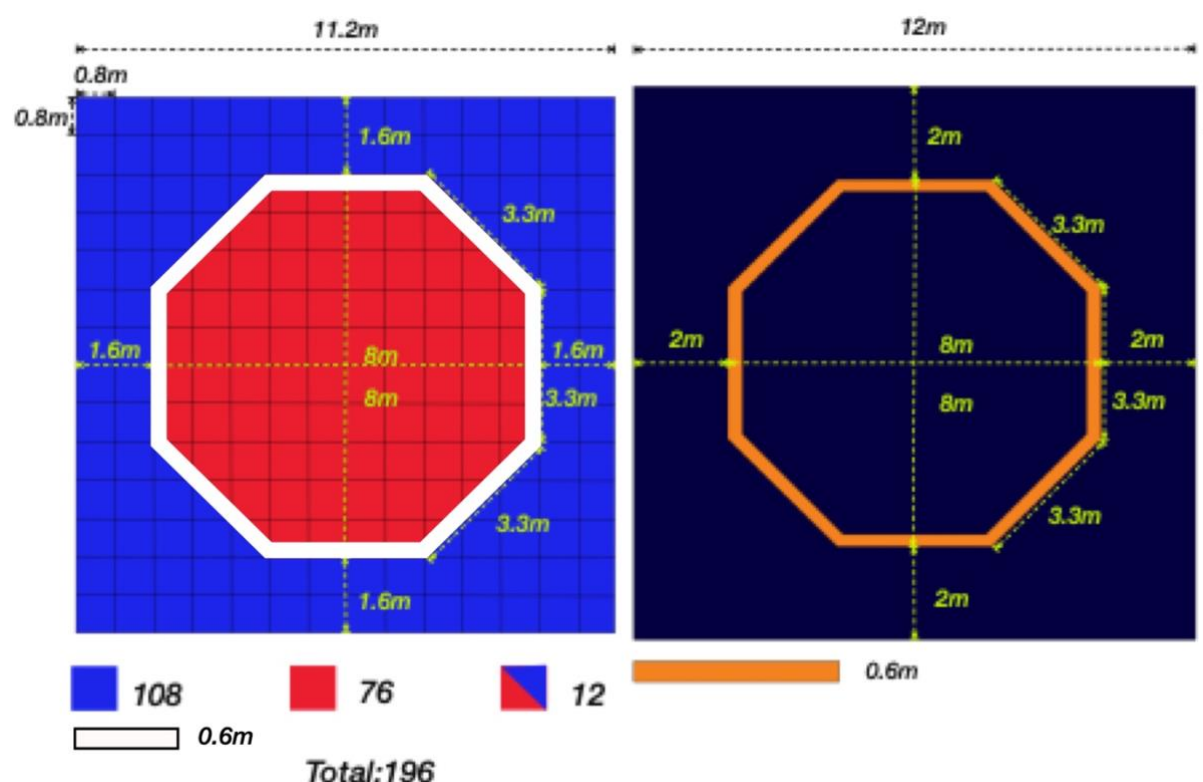
### 4.1 MAT SIZE AND SPECIFICATIONS

#### A – Mat properties:

The mat size and properties should follow the WT Rules.

The mat should be selected following the list of the recognized companies<sup>10</sup>.

For WT promoted competitions octagonal mat is mandatory.



#### B – Mat size and distances:

The size of the octagon is 8m by 8m.

The total size of the mat varies depending on the length and the width of the FOP.

The final design should be confirmed by the WT Games Chairman and WT Sport department.

The distance between the LED panel and the TA table should be 3m away from the end of the safety area.

<sup>10</sup> Refer to the WT recognized companies

## C – FOP shape:

The field of play shape depends of the number of mats and the size of the venue.

Two different shapes are currently used for Taekwondo promoted competitions:

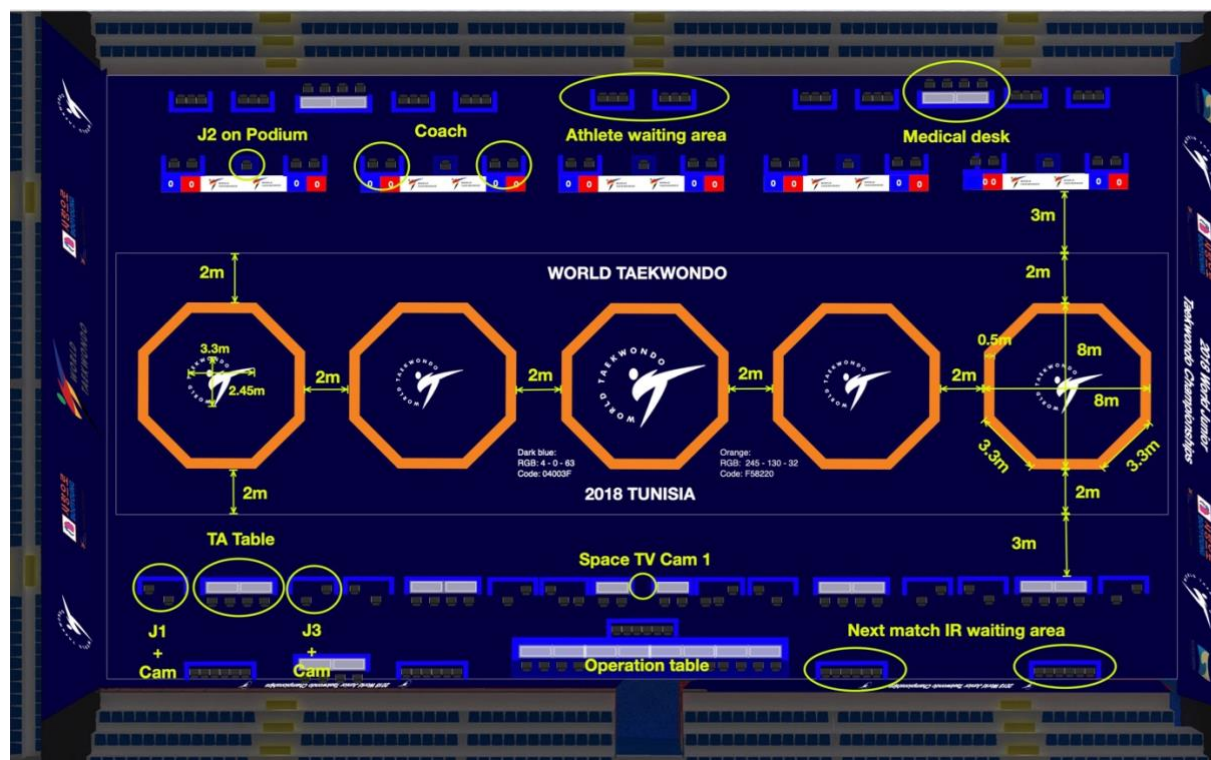
- Platform shape (Olympic Games, Continental Games, 2013 World Taekwondo Championships, Etc.)
- One-line shape (WT Grand prix series and 2015/2017 World Taekwondo Championships)

## D - Number of mats:

The number of mats depends on the number of athletes and the number of competition days.

The number of mats usually used during the WT Championships are the following:

- WT World Championships: 5 mats
- WT Grand Prix: 3 mats
- WT Grand Prix final : 2 mats / 3 mats
- WT Grand Slam: 1 mat





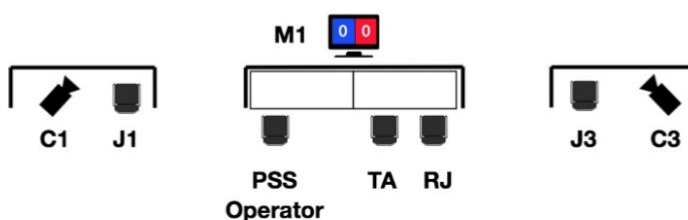
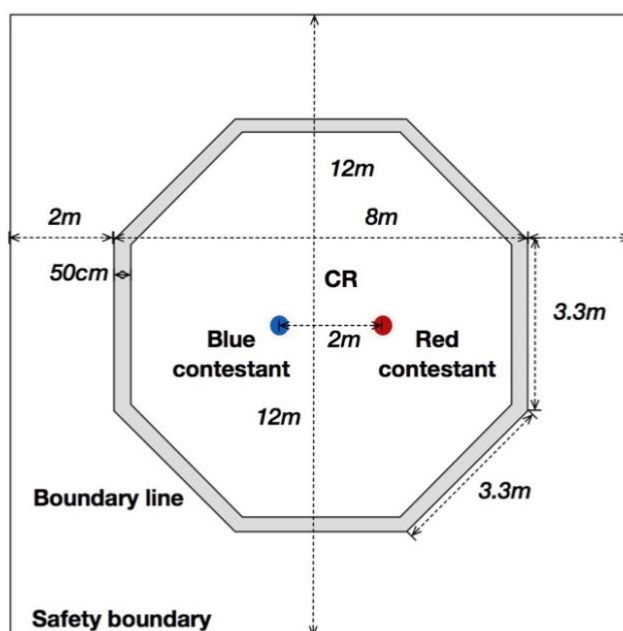
#### 4.3 ONE LINE SHAPE

##### A –Description:

The one-line design was introduced for the 2015 World Taekwondo Championships in Chelyabinsk.

This is the current design used for all the Grand Prix series and also the last 2017 World Championships.

However, the floor length of the FOP should be longer than 64m for 5 mats and longer than 42m for 3 mats. Include 2m meters each side for safety.







## 5. COMPETITION FUNCTIONAL AREAS

### 5.1 WARMING UP AREA

#### A – Description:

The warming up area is the location where the athletes and coaches train and prepare for going onto the field of play.

The size should cover 6 mats minimum for World Championships and 3 mats for Grand Prix.

The training room available for teams should be separated.

The RTDS must be displayed on the warming up area.



#### B - The equipment:

- 2 TV monitors + 2 HDMI cables 2m
- 2 Laptops
- Fridge + water available for players and coaches.
- Network connection to connect with the laptop and TV monitors.
- 2 multi sockets (4 plugs).

## 5.2 INSPECTION DESK AND EQUIPMENT AREA

### A – Description:

The inspection desk should be located between the warming up area and the call room.

Two International Referees are located at the inspection desk to check if the equipment is following WT rules and policies.



### B - The equipment:

- 2 tables
- 1 or 2 metal detectors provided by WT
- TV monitor + HDMI or VGA cables
- 1 Laptop for RTDS
- 1 Laptop for sensing socks checking<sup>11</sup>
- 1 sensing sock card verification<sup>12</sup>
- 1 network cable connected to the competition network.
- 2 Power multi power sockets (4 plugs).

<sup>11</sup> KPNP system

<sup>12</sup> Daedo system

## C- PSS sensing socks verification equipment



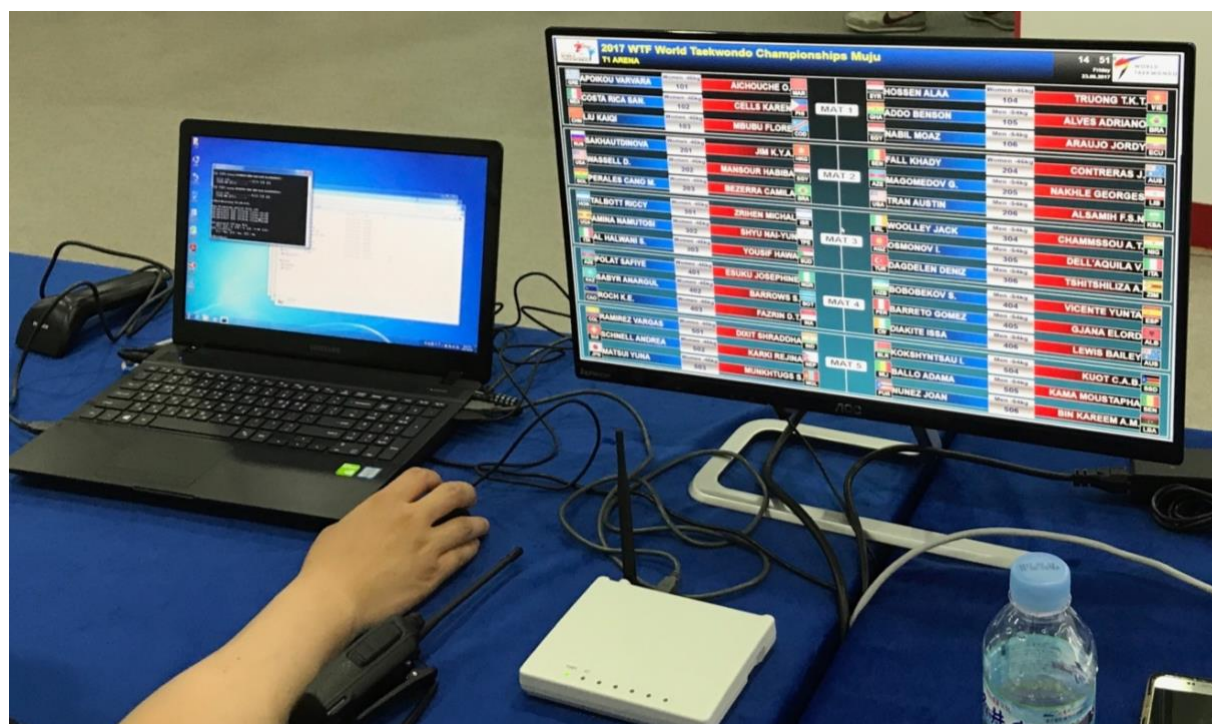
PSS socks check KPNP



PSS socks check Daedo



### 5.3 PSS TESTING AND REGISTRATION



#### A - Description:

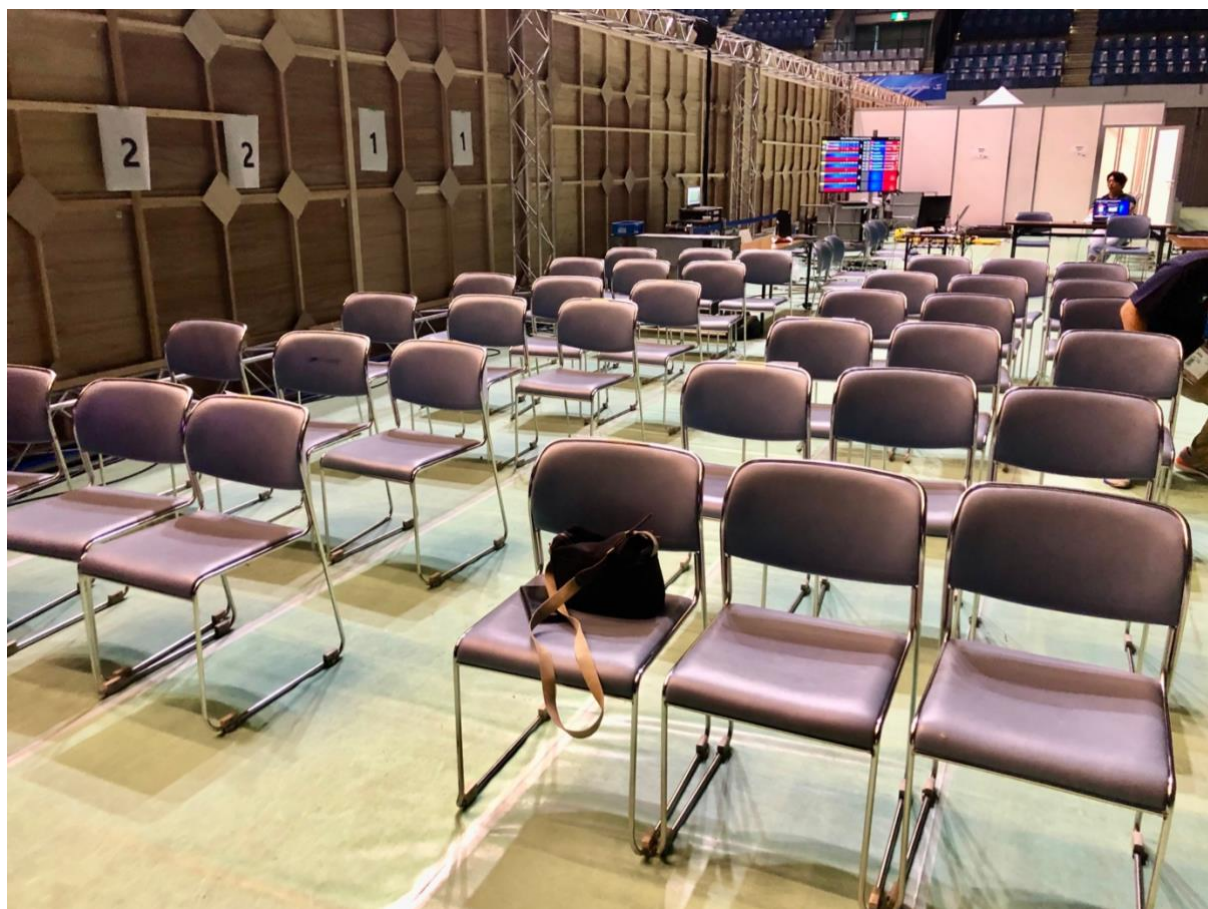
Before entering to the Field of Play the PSS system need to be registered and tested in order to provide smooth process for the game.

Each contestant has to test the protections before sitting on the call room.

#### B - The equipment:

- 2 tables
- 1 Tv monitor + HDMI or VGA cable
- 1 Laptop for RTDS
- 1 Laptop PSS test and registration
- 2 network cables connected to the competition network<sup>13</sup>.
- 2 multi sockets 5 plugs.

## 5.4 CALL ROOM



### A - Description:

The call room is the place after inspection area and the PSS testing. The call room is a waiting area for the athletes, coaches and team doctors before to enter to the field of play.

### B - The equipment:

- 2 tables
- 1 Tv monitor + HDMI or VGA cable
- 1 Laptop for RTDS
- 2 network cables connected to the competition network<sup>14</sup>.
- 2 multi sockets 5 plugs.

---

<sup>14</sup>

## 5.5 STORAGE



A storage room must be allocated for the equipment. The storage must have easy access to the field of play without disturbing the areas described previously.

The storage must be a safe area controlled by the PSS technician and WT IT.

## 5.6 MEDIA TRIBUNE:

### A - Description:

The media tribune should be located in the stage and able to host 20 journalists.



### B - The equipment:

- Power socket under each table
- Internet by WIFI or by 20 Lan cables 50Mb/s symmetric dedicated to the press (SSID: WT Press)



## 5.6 REFEREE ROOM:

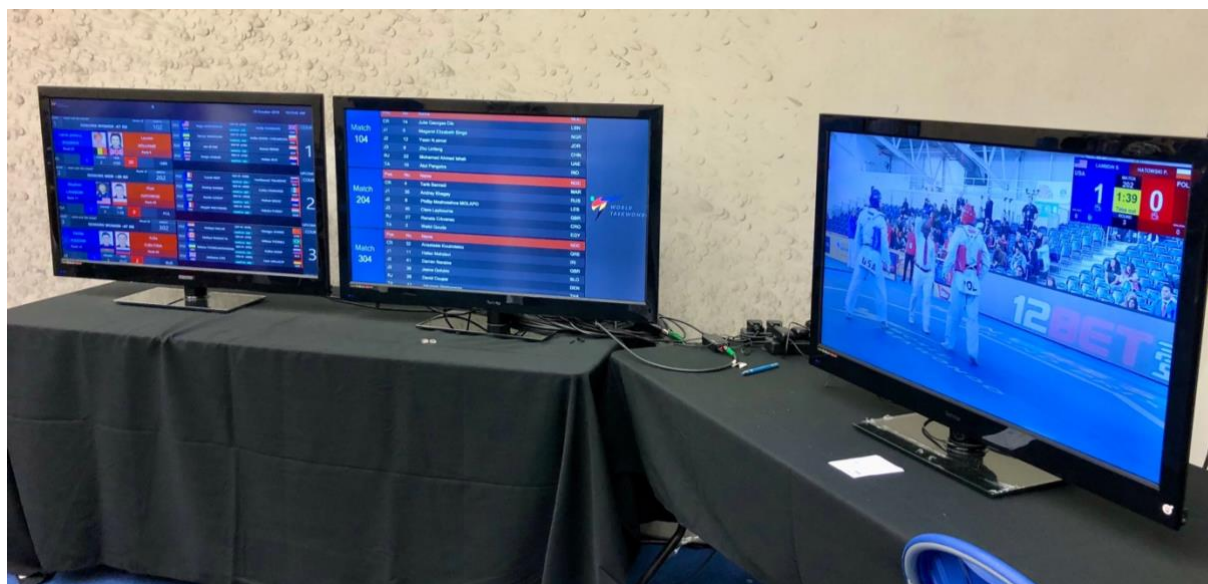
### A - Description:

The Referee room is located near by the field of play and is the place where the referees who are not assigned can rest and wait for the next game.



### B - The equipment:

- 2 Tv monitor + HDMI cable
- 1 video line coming from the Referee chairman position on the FOP.
- 1 Laptop for RTDS
- 1 network cables connected to the competition network<sup>15</sup>.
- 2 multi sockets 5 plugs.
- 1 laptop and 1 monitor for the live streaming



## 6. TECHNOLOGY AND SET UP

### 6.1 SCOREBOARD

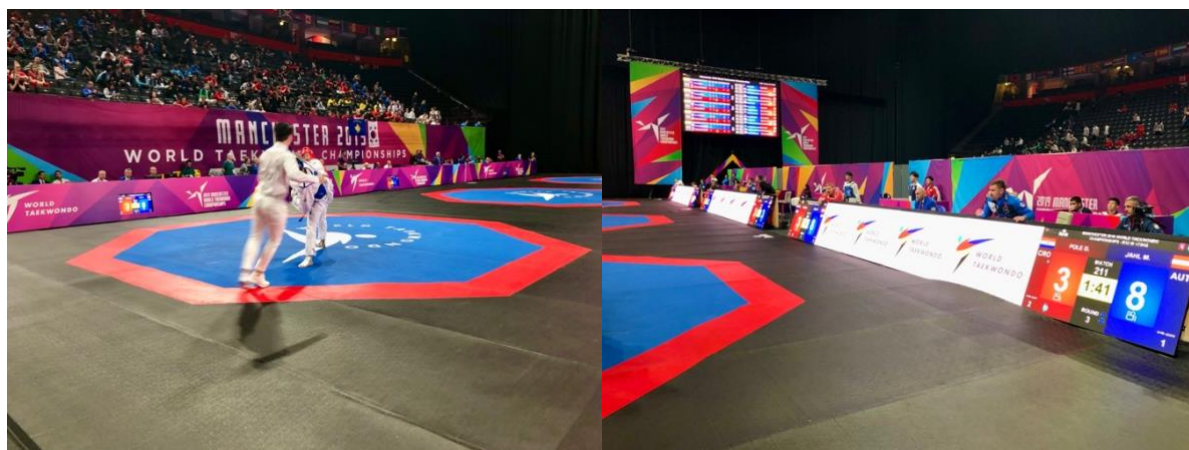
#### A – TV monitors specifications:

3 or 4 scoreboards are required per mats.

The scoreboard set-up could be:

- 2 Tv screens (50inch) on the back and 1 in front of the TA table
- 1 or 2 screens (50inch) on the back and 2 screens on each side of the TA table.

To provide good view for the audience the size of the TV monitor must be the same and bigger than 50 inches.



#### B – LED panels specifications:

The size of the LED panels should be the following:

Length: 8m

Height: from 0.8m to 1m

The back of the LED panel should be protected to avoid risk of disconnection by coach or the referee behind the panel.

**The pitch (distance between the pixels) of the LED panel should be between P5 and P10.**

## C – Connection between PSS and IVR system to the TV monitors:

The scoring display comes from the PSS laptop and the IVR system using a video switcher in between to show the scoreboard or the video replay.

The video output can use the following connections:

- HDMI

### ➤ HDMI output:

The HDMI input is usually available for all the TV monitors. The HDMI output allows high definition resolution from 720p until 1080p. 1920\*1080 also named as Full HD is the resolution recommended for scoring display.

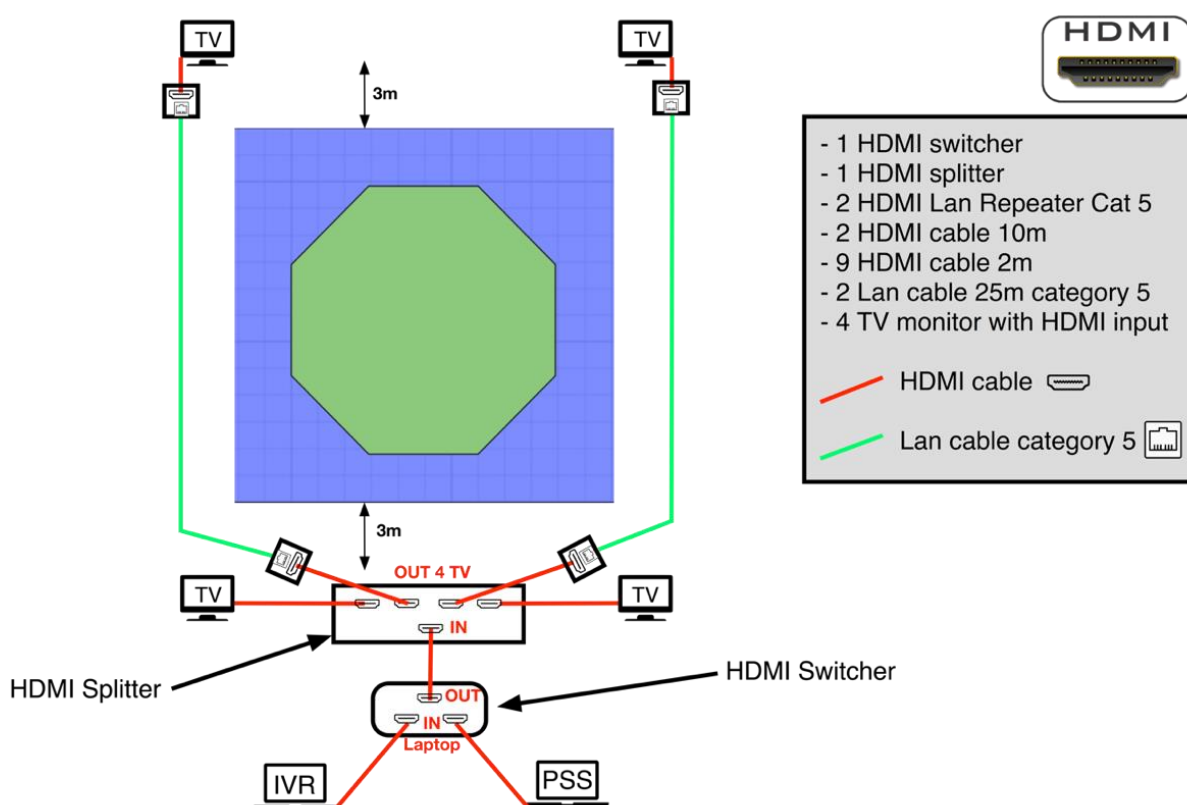


Diagram using HDMI output on 4 TV monitors

**HDMI Lan repeater:** This hardware will extend the HDMI signal. The HDMI signal through HDMI cable is limited to 20m. With the HDMI Lan repeaters, the distance can be increased up to 60m (Depending on the repeater properties). The device must be a quality product to guaranty a good video signal.



**HDMI to HD-SDI converter:** The HD-SDI signal is uncompressed and passes by a coaxial cable or optical fiber. The coaxial cable is connected using a BNC plug and allows long distances up to 100m.



**Remark:** Other HDMI cables mount could be proposed but should be first verified by WT IT.



## 6.2 FOP PUBLIC SCOREBOARD

### A - Jumbo screen and LED wall specification:

A jumbo screen must be installed on the field of play.

The size of the screen is the following:

- Length: Multiple of 2.4m
- Height: Multiple of 1.3m
- Format: 16:9
- **Pitch: P5 – P12**

1 Jumbo screen per mat is recommended.





## **B – Video contents display on Jumbo screen:**

The production should display on the jumbo screen the following contents.

The video material will be given before the competition.

Before the session:

- Promotional video of the Championships
- Video “How to score in Taekwondo”
- Promotional video WT and THF

During the competition:

- Video feed of the competition
- Sponsors (See with Marketing department).
- Live Scoreboard and RTDS

Semi-final and finals:

- The RTDS feed and head to head.
- HB feed
- Instant video replay
- Sponsors (See with Marketing department).

## **C – Instant video replay on jumbo screen:**

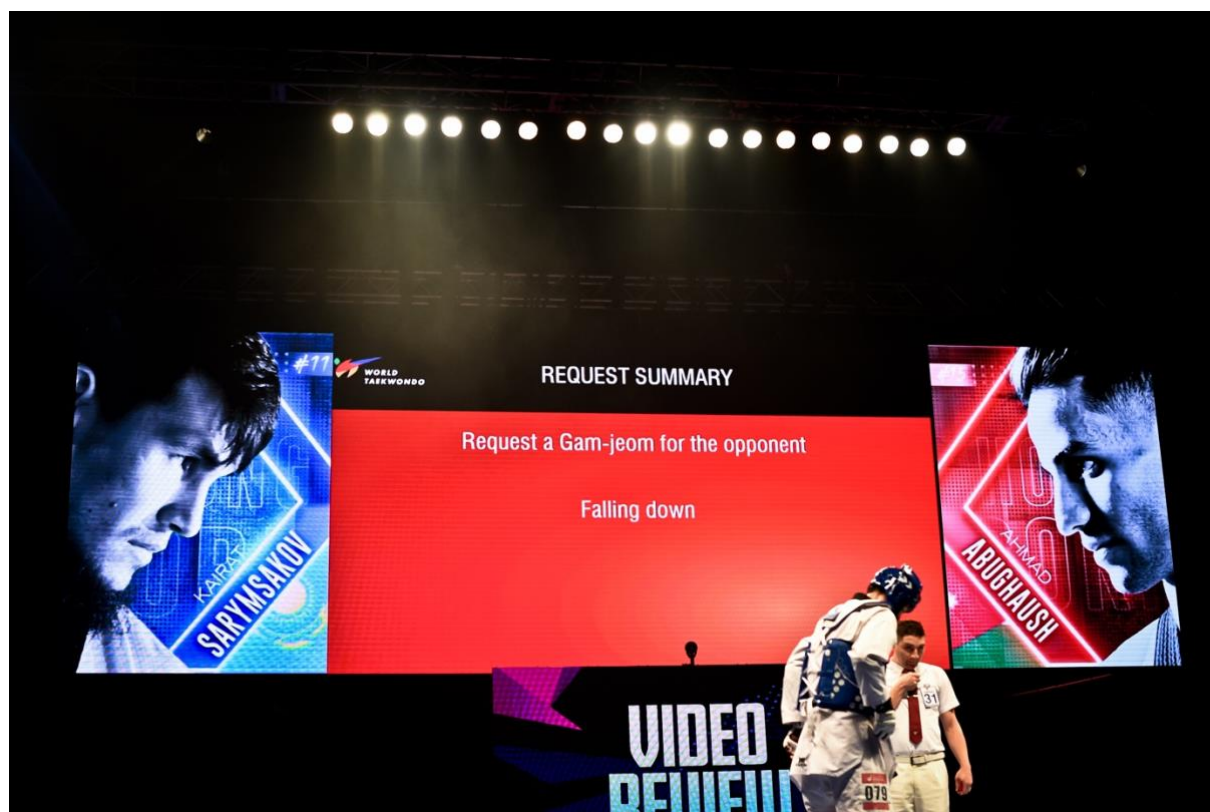


The instant video replay must be displayed on the jumbo screen for semi-finals and finals.

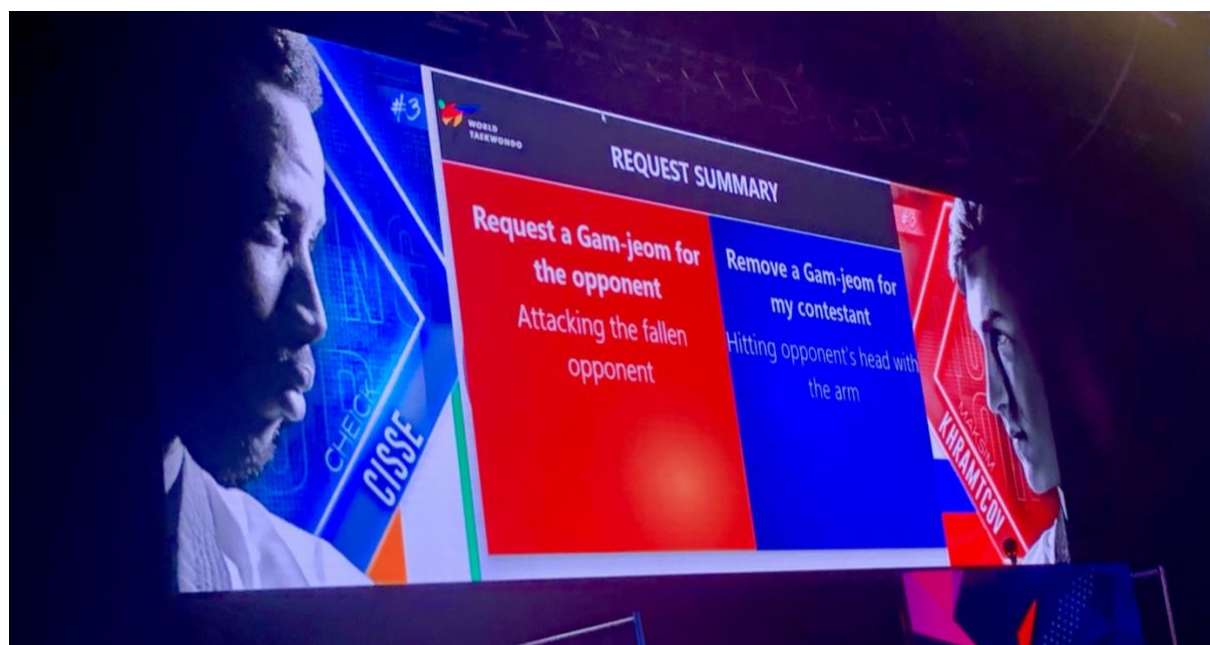
The production company responsible for the screens control should provide a coaxial cable to receive HD-SDI signal to the TA table on the central court (BNC output).

A graphical overlay must be presented before the replay to inform the audience. The production has to switch to video review feed just after the graphic display.

#### D. Instant video replay request summary:



*Red coach instant video replay request summary*



*Blue and red coach instant video replay request summary*

## E – Scoreboard and RTDS:



Scoreboard on jumbo screen

The OVR is responsible for displaying all the necessary information about the competition process. The audience, participants, officials and media should be able to follow the match progress and the results.

Scoreboard:

- Jumbo screen

The RTDS:

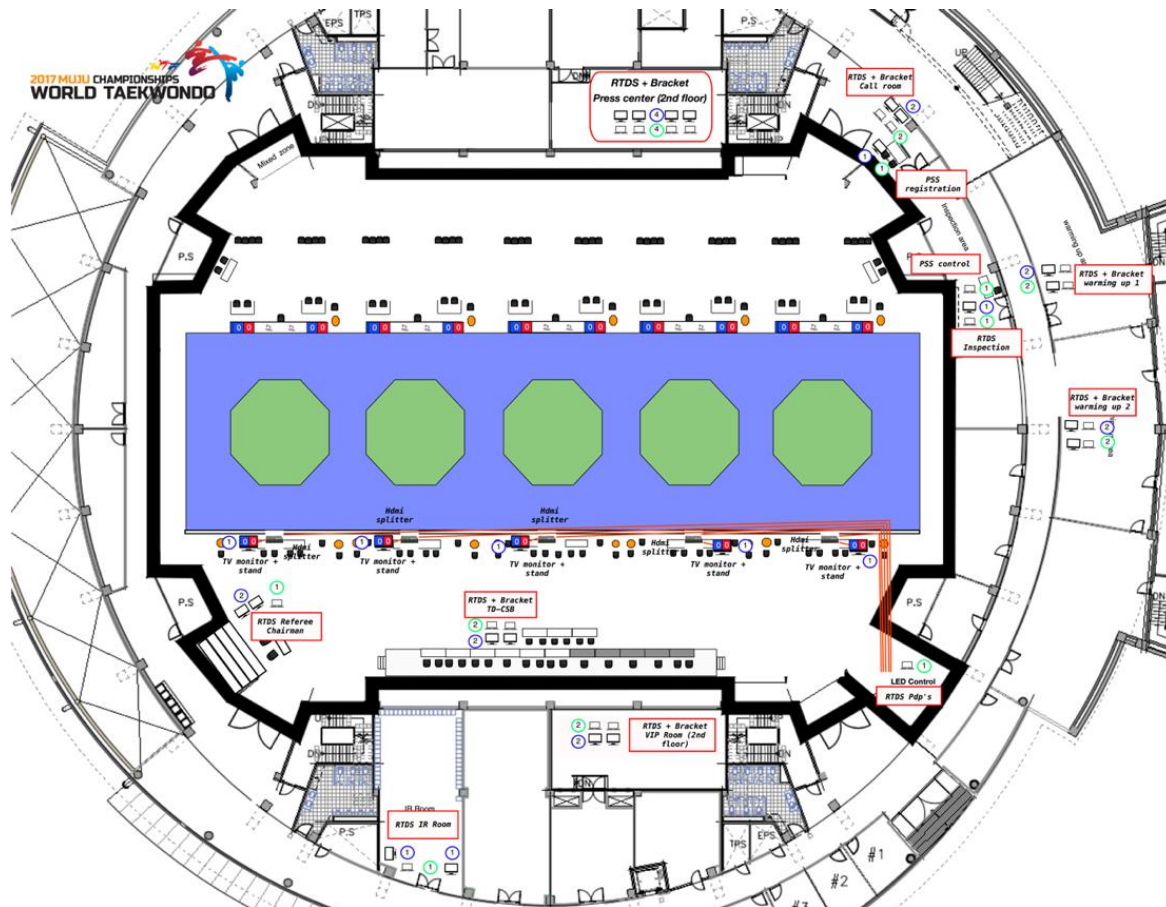
- Warming up area
- Inspection desk
- Call room
- CSB and Competition announcer on operation table
- Operation table for Referee Chairman
- Referee lounge

*Optional:*

- VIP Room
- TV Commentator
- Mixed zone
- Media area



RTDS diagram 2017 Muju World Taekwondo Championships



*RTDS Template:*

[illegible]





## B – Internet

Internet should be provided in different areas:

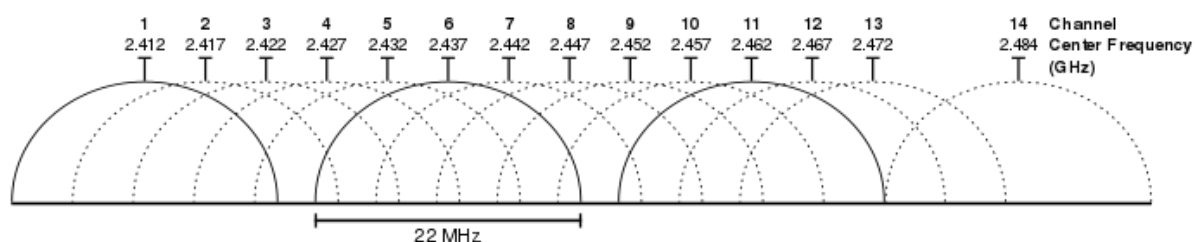
- Local network -> 100Mbps/s symmetric connected to the competition network.
- Media and press room -> 50Mbps/s symmetric by Lan cable or WIFI
- Competition field of play for WT and official 50Mbps/s using Lan cable or WIFI.

The WIFI password shouldn't be communicated. Only the network technician, the competition manager and WT staff should have the key.

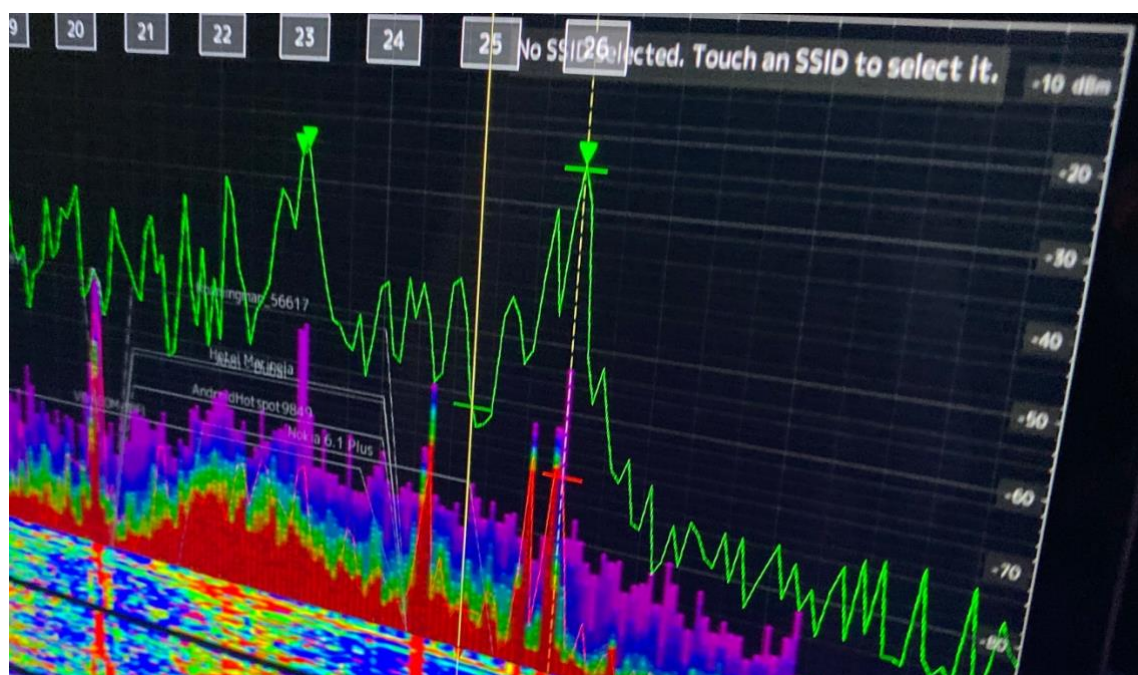
## C – WIFI:

Any WIFI 2.4Ghz on the field of play should respect some requirements.

The PSS system is using wireless communication and some WIFI channels should be dedicated to the PSS.



The PSS uses the channels up to channel number 6 to communicate between their transmitters and receivers. The network technician should block any WIFI router using these channels. The internet using WIFI will be only the channels 1 to 6.



## 6.4 POWER AND ELECTRICITY

### A – Field of play power supply

The power on the FOP should come from an industrial power distribution board. From this board, all the lines should be distributed to the main location using industrial sockets and cables.

From this socket, the power will be distributed to each areas and systems.

- All the main systems, TVG, OVR, PSS and IVR will be connected on UPS.
- The broadcast uses their own power generated from the HB truck.
- The LED and jumbo screen should have their own power distribution board.



*Industrial power distribution board*



*Uninterruptible power supply*

### B – UPS Uninterruptible power supply

The Uninterruptible power supply will provide power if the power board or any plugs is disconnected.

It's a temporary power back-up in order to allow enough time to reinstall the power.

The capacity of the UPS should be over 1000Watts.

### C – Power distribution:

**200A minimum should be distributed to the field of play (Excluding light, LED, Jumbo screen and sound).**

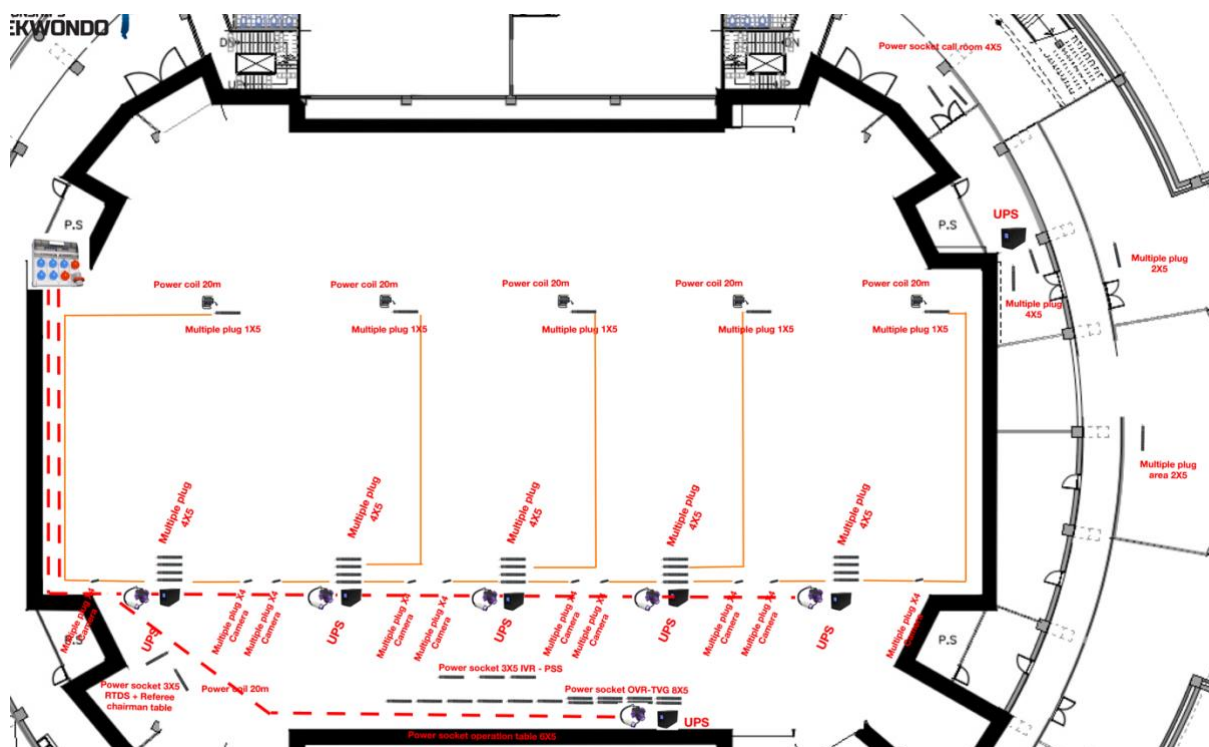
The power should be distributed to the following providers:

- OVR: Operation table, RTDS Call room, RTDS Warming up area, RTDS Inspection desk, RTDS Referee chairman and CSB, RTDS Media and other optional RTDS.
- PSS: Each technical assistant table + Storage to charge the transmitters.
- Instant video replay: Each technical assistant table and cameras location.
- TVG: The TVG is located near the OVR on the Operation table.

## D – Equipment list:

- 1 UPS per TA Table
- 4 multi sockets 5 plugs per TA table
- 1 UPS for the OVR at the operation table
- 6 multi sockets 5 plug for OVR and TVG at the operation table
- 1 multi sockets 5 plugs per table at the Operation table
- 2 plugs for each camera location (Long cable over 10m + multi socket 2 plugs) -> 1 coil 30m + 1 multi socket 5 plugs per mat is recommended to bring the power to the camera 3.
- 2 multi sockets for each functional area<sup>16</sup>

Example of power distribution for 2017 World Taekwondo Championships in Muju.



## 7. CONCLUSION

Any questions please [IT@worldtaekwondo.org](mailto:IT@worldtaekwondo.org)

A dedicated check-list including venue and FOP organisation will be sent separately after the 2<sup>nd</sup> site visit.

<sup>16</sup> Refer to part 5.1, 5.2, 5.3 and 5.5