

# SWIM BEHAVIOR MONITORING

## 1. Background

In the recent past, the athletes' swim conduct has been widely discussed among the elite triathlon community. The athletes themselves have requested World Triathlon to act and they expect from us a strong enforcement of the actual rules around swim behavior.

As such, World Triathlon is taking the following measures that impact the Local Organising Committee of WTCS, WC, and WTCS Final.

## 2. Swim Course Design

- 2.1 Particular attention needs to be given to the swim course design, especially the distance to the 1st buoy. World Triathlon needs to guarantee the distance to the 1st buoy is as close as possible to the 350m.
- 2.2 Preferably, we should have a first lap of 1000m and a second lap of 500m in a standard distance format triathlon event.
- 2.3 Please refer to the EOM for further information.
- 2.4 The course needs to be reviewed and approved by the World Triathlon Technical Delegate.

## 3. Marine Plan

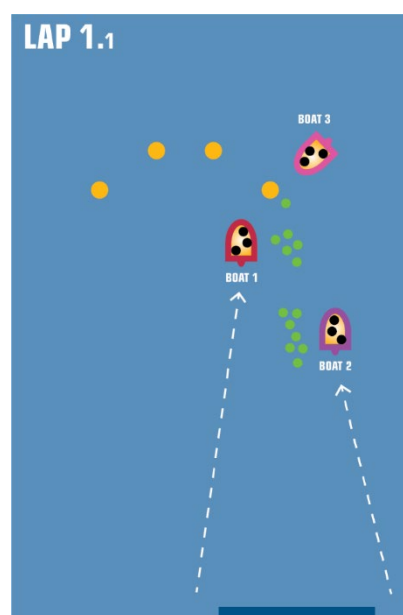
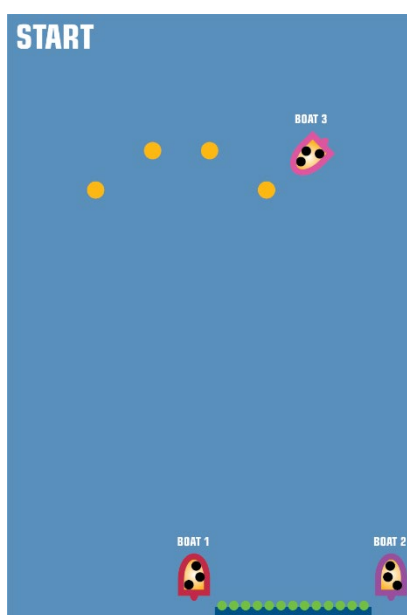
- 3.1 The LOC should provide the following equipment to the World Triathlon TOs
  - 3 TO boats with pilots;
  - 3 Ipad/tablets for recording the athlete's activity on the water surface;
  - 3 volunteers operating the tablets.
  - TOs boats have priority on any other vehicle on the water.
- 3.2 Boats speed should not exceed the one of the athletes even when taking over new positions, unless in case of emergency.

3.3 TOs boats are expected to come close to the athletes (+/- 5m) for being able to clearly identify the infringements.

3.4 The TOs should monitor groups of athletes and not individuals.

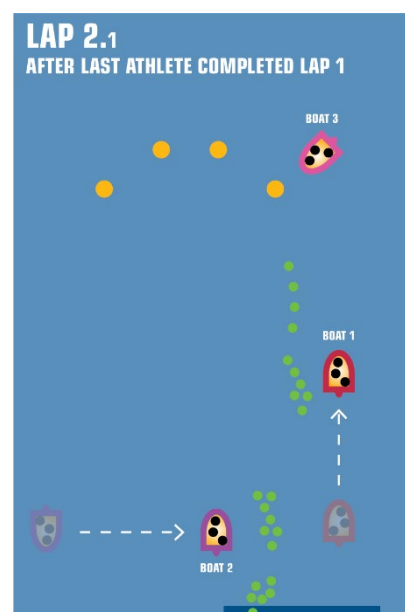
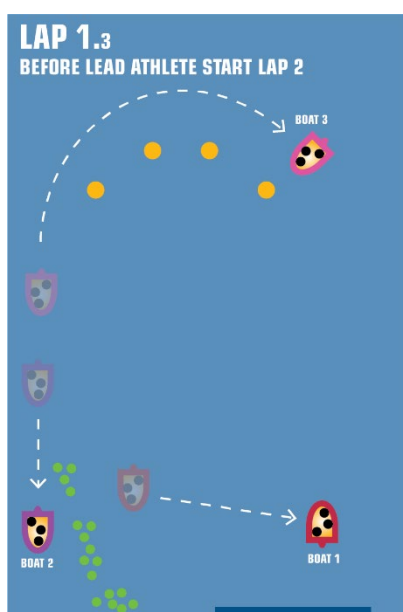
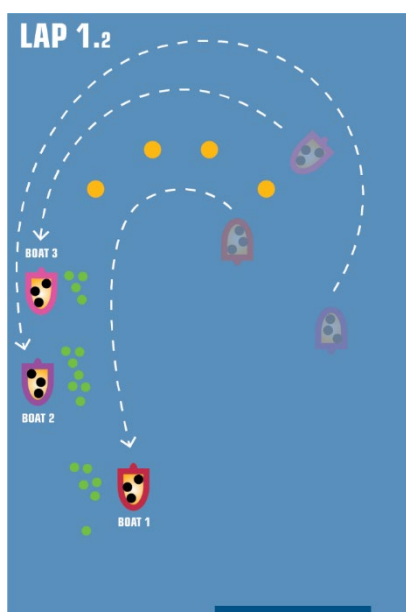
3.5 Boat movements are as follows (except in case of emergency):

- START (see start graphic)
  - Boats 1 and 2 are on each side of the pontoon/start area
  - Boat 3 is in position at 1<sup>st</sup> buoy
- LAP 1 (see 1.1 graphic)
  - Boat 1 and 2 start moving with the athletes on either side
  - Boat 1 (inside trajectory) always take the 1st group of athletes, boat 2 (outside trajectory) takes the following group. Note that the 1st boat does not necessary moves with the leaders.



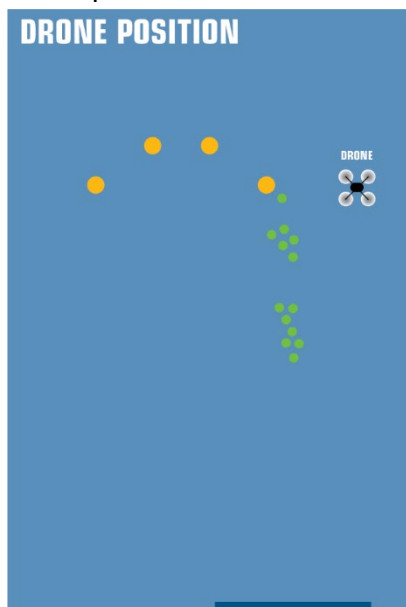
- LAP 1 / 1st buoy (see 1.2 graphic)
  - Boat 3 is observing the passage of Buoy 1 from the outside of the course and follows them behind the Boat 2 by monitoring the next group of athletes.
  - Boat 1 is following its athletes.
  - Boat 2 is passing around Boat 3 to catch up the group he was monitoring on the way to Buoy 1

- LAP 1 / end of lap (see 1.3 graphic)
  - Before the lead athlete gets out of the water to complete lap 1, approx. 50m from the swim exit, Boat 1 is crossing the FOP to take the position on the outside trajectory.
  - Boat 2 stops 50m before the swim exit and waits the last athlete to complete lap 1 before taking position on the inside trajectory and monitor its group.
  - Boat 3 is returning to its primary position.
- LAP 2 (see 2.1 graphic)
- Boat 1 now follows the 1<sup>st</sup> group of athletes from the outside trajectory.
- Boat 2 is following the second group of athletes from the inside.
- Boat 3 monitors the behaviors at buoy 1 and follows the last group from the outside.



## 4. Drone operation management on World Triathlon events

### 4.1 Drone position



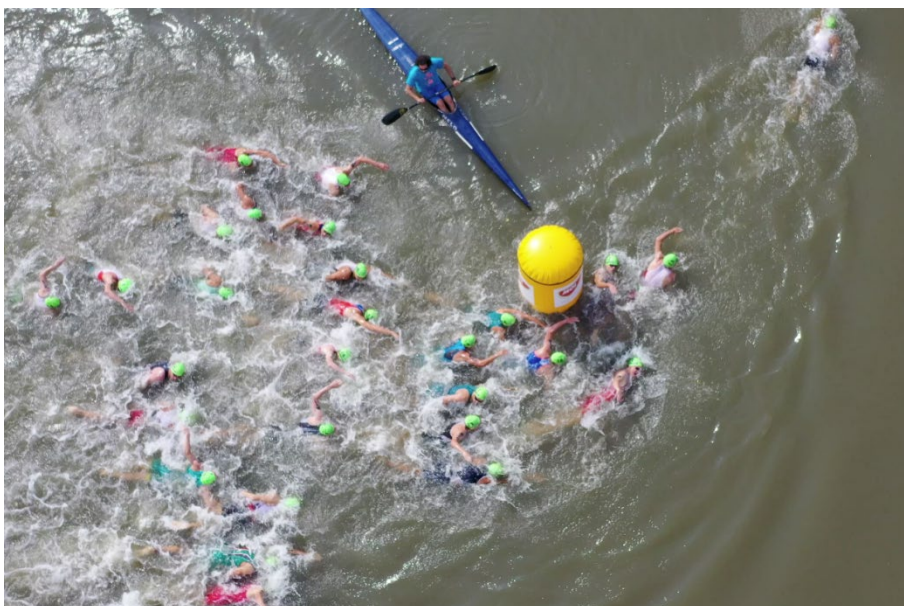
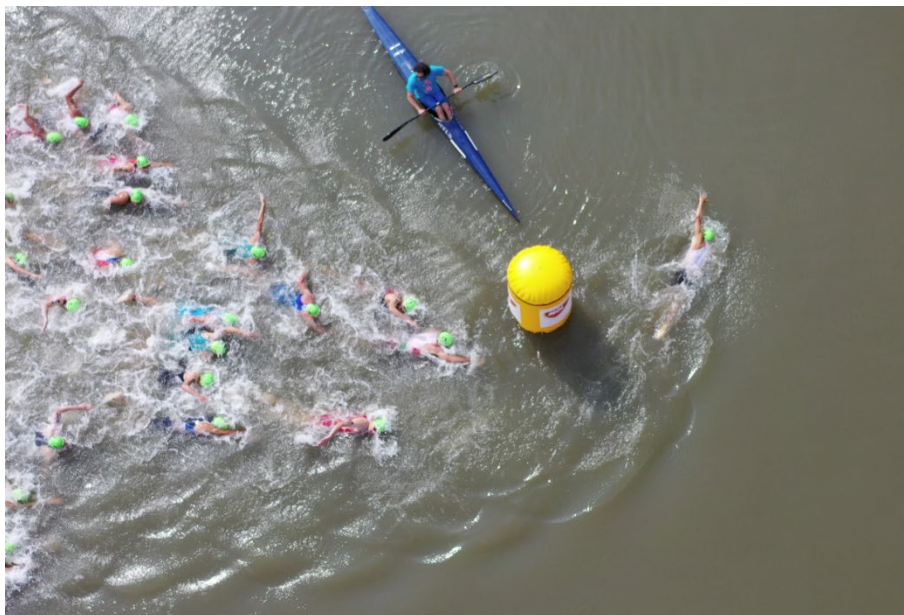
### 4.2 What to consider by the operator before flying

- [Local rules and regulations](#)
- Weather conditions (especially the wind and the KP index)
- Liability insurance is in place
- Areas have been isolated and secured for take-off and landing
- No flying above crowd
- Identify the “no-fly zones” (e.g. jails, military compound, etc.)
- Presence of other drones (operational height and their movements)
- Drones autonomy (time and distance)
- Wifi signals which may create issues
- Omnidirectional obstacle sensing to be used (note that the water surface can create issues with the obstacle sensing)
- Liaise with the World Triathlon Technical Delegate
- Set-up rehearsal during the events swim familiarisations
- Confirm the process to providing images to the Head Referee.

### 4.3 Operation positions

- In case of DJI Mavic 2 Pro – 5 to 10 meters from the 1st buoy

- Flight height (above the water) – 4 to 8 meters but visual connection with the drone is strongly recommended
- At the positioning make sure that:
- You can see the surroundings of the buoy
- You can identify the athletes from the position where you are
- You can see the “action”



Please see also attached video [HERE](#)