

MBZIRC2020

SAFETY PROCEDURES, POLICIES, AND RULES



SAFETY MANUAL

Each Arena is explicitly controlled by the MBZIRC 2020 Project Director, as well as the Challenge Manager and the Health & Safety Manager. These officials have the authority to stop a trial/test or challenge at any time. Teams may face sanctions including disqualification for not following the rules outlined in this document.

DEFINITIONS

- **UAE** – The United Arab Emirates
- **ADNEC** – The event venue. Abu Dhabi National Exhibitions Centre.
- **Protec** – The event operations and technical contractor.
- **Vehicle** – Any unmanned aerial vehicle or unmanned ground vehicle
- **Participant** – Operators and their teams competing in the event
- **Event Official** – Anyone engaged by ADNEC or Protec to operate the event in a professional capacity.
- **Event Organizers** – Any one who is responsible for the implementation of the event plans.
- **GCAA** – The General Civil Aviation Authority. The local authority that oversees and implements legislation involving the operation of drones and other civil aviation.
- **Fly Zones** – Any area where the vehicles will engage in flight.

(Test areas and Arenas 1-3)

KINDLY ENSURE THE FOLLOWING

- Lithium Batteries are always charged in a controlled area.
- Batteries are in usable condition. Notify event staff if any of your batteries are puffy or misshaped, too hot, cracked, broken or otherwise unusual.
- The Drone is programmed to return to its landing area if safety is compromised.
- All operators are familiar with the UAE laws regarding the operation of unmanned aerial systems.
- You will allow for fly zones to be cleared by Ground Operators and the Event Safety Officer before all flights.
- All directives from event organizers are abided by.
- You are not permitted to enter any of the arenas without explicit approval by the event organizers. If you are allowed to enter an arena you must wear safety helmets and goggles. If you are allowed to accompany the operator of a powered access platform to retrieve a vehicle stuck at height you must wear a safety harness and you must always follow the instructions of the operator. You are not allowed to climb on any structure to retrieve a stuck or otherwise uncontrolled vehicle.
- That you do not engage the vehicle anywhere other than at the designated test areas and arenas 1, 2, and 3.
- All work and tests are carried out only in your respective team area and test area in ADNEC Halls 6, 7, or 8.
- Your team area is kept tidy and free of hazards.
- No hot work or naked flames are permitted in the team areas, test areas, or competition arenas. Please notify event official if you need to perform hot works such as soldering. The official will provide a designated space for hot work.
- Your team area always has one Co2 Fire extinguisher and 1 ABC fire extinguisher available. (supplied by Organizer)
- You notify the ADNEC clinic and/or the closest event official near you in the event of a medical emergency or incidents requiring first aid. You can call the ADNEC clinic at +971 2 406 4456 or 02-446-4456 when using a UAE based SIM.
- Notify Venue Security and/or the closest event official in the event of any non-medical incident that you consider to be an emergency.
- Notify any Organizer/Event Official in the event of any incident that may compromise safety.
- In the event of an accident or loss of a vehicle you are responsible to notify an event official immediately.

| POLICIES AND PROCEDURES

BATTERIES

TRANSPORTATION OF LITHIUM BATTERIES

- Lithium batteries must be transported according to manufacturer's recommendations.
- Check with your airline regarding the transportation of lithium batteries on a commercial flight.
- Keep batteries in a cool, dry place during transportation. Do not leave batteries in direct sunlight or a hot vehicle.
- Do not transport cracked, puffy, hot, or otherwise damaged batteries until you can determine the battery is either safe or have the batteries transported by professional waste company.
- Ensure your batteries are always labelled properly.

STORAGE OF LITHIUM BATTERIES

- Batteries must be stored according to manufactures recommendations.
- Batteries must be stored in a cool dry place out of direct sunlight or other sources of heat.
- Batteries must never be stored on the charger.
- Batteries must be brought to 30% state of charge before storage.
- Batteries must not be allowed to reach at or below freezing temperatures.
- Store Batteries in a Lipo Sack when practical or another approved, fire safe container.

CHARGING OF LITHIUM BATTERIES

- Li Ion batteries that have been cold charged are unsafe, not allowed at the event site, and must be recycled properly.
- Never charge a primary battery. Store one time use batteries separate from Li Ion batteries.
- Do not parallel charge batteries of varying age and charge status; chargers cannot monitor the current of individual cells and initial voltage balancing can lead to high amperage, battery damage, and heat generation. Check voltage before parallel charging; all batteries should be within 0.5 Volts of each other.
- Do not overcharge (greater than 4.2V for most batteries) or over-discharge (below 3V) batteries

UNCONTROLLED OR STUCK ROBOT VEHICLES

UNCONTROLLED VEHICLE

- It is always the participant's responsibility to maintain control of the vehicle at all times.
- Should the participant lose control of the vehicle and the vehicle becomes stuck in the arena nets only approved participants and staff may enter the arena to retrieve the vehicle, after receiving explicit approval from the event organizers.
- Should the vehicle become uncontrolled the participant should continue to try and gain control of the vehicle until the batteries cause the vehicle to stop operating.
- The participant may not leave the controls for any UAV un-attended during operation
- The Drone is programmed to return to its landing area if safety is compromised

STUCK VEHICLES

- No participant may enter the arenas without first being authorized by the arena safety official to recover a vehicle that is stuck in the arena nets.
- Should a participant gain authorization to enter the arena the participant must wear a helmet and safety goggles, and may only recover a vehicle that is at a height reachable by the participant while standing on the ground.
- If the participant chooses to, and receives approval from the event organizers, he or she may accompany the arena staff on a Mobile Elevated Work Platform to recover a vehicle that is stuck at a height higher than reachable from the ground. If a participant chooses to accompany the staff member the participant must wear the proper PPE, including a full body harness with a back mounted D-ring and a work helmet that can be strapped on.

THE ARENAS:

ARENA ACCESS

- Arena Access is not permitted without approval from the arena safety official.
- The arena may be accessed by participants on a limited basis if they have a legitimate reason to enter the arena, ONLY after receiving explicit approval from event organizers.
- Upon approval of competition officials. Participants may enter the arena with an event official for the purpose of inspecting and observing the arenas prior to competition.

TAMPERING WITH OR UNAUTHORIZED ACCESS TO THE ARENAS

- The arenas are temporary structures and are not designed for general public use.
- Climbing on the arena structures or any of its components is strictly prohibited.
- Any tampering with the structures is strictly prohibited and will result in sanctions including potential disqualification.
- Any unauthorized entry to the arenas is strictly prohibited and will result in sanctions including potential disqualification

ADVERSE WEATHER CONDITIONS

- The weather in and around ADNEC will be constantly monitored by competition officials.
- If the weather becomes extreme, the competition officials will halt all trials until further notice.
- In the unlikely event this happens, each participant should have a contingency plan to land all airborne vehicles immediately.

EVACUATION OF THE ARENA AND GRAND STAND AREA

- Prior to any access into the grand stand area participants will be briefed on evacuation routes and assembly points.
- Strictly follow directives from event organizers and venue security for any evacuation instructions.
- Remain calm and exit orderly during any evacuation.
- If an evacuation is ordered you must evacuate to the nearest assembly point and await further instructions from Venue Security, Civil Defence or the Event Organisers.

TEAM AREAS

TEAM AREA ACCESS

- Access is strictly controlled within these areas and will be strictly monitored. Only registered participants and those approved by event organisers can enter the team areas.
- Unauthorized entry to team areas is prohibited.

SAFETY IN THE TEAM AREAS

- No test flight operations can be carried out in the team areas.
- If there is an evacuation order kindly follow directives from Venue Security, leave all tools and belongings behind and go to the nearest assembly point.
- Comply with all directives given by event organisers while working.
- Keep your area free of trip hazards or other dangerous obstructions.
- Keep your workspace neat and tidy at all times.
- Do not keep water or other liquids near charging batteries or other energized components.
- In the event of a fire, do not use equipment you are not comfortable with. Do not try to fight a fire that could not be extinguished with a hand-held fire extinguisher. Raise the alarm immediately.

COMMUNICATION:

- All transmitters must be on the 2.4 GHz and 5 GHz Wi-Fi frequency spectrum as authorized by local UAE Telecommunications Regulatory Authority (TRA).
- Direct radio control link shall be maintained between the user and the UAV/UGV at all times.
- Pilots controlling a drone that has crashed at any point during a trial and are unable to resume control of the drone must DISARM the drone immediately, inform the Arena Manager and wait until the trial is over. The vehicle will be recovered by an Event Official.
- An Event Official may use various hand signals in to indicate airworthiness status to the pilot. Thumbs Up means the pilot is pre-cleared for flight. Thumbs Down means the craft is damaged and is not able to fly; you must disarm and wait for further instructions.

IMPORTANT EMERGENCY INFORMATION AND CONTACT NUMBERS

In the event of an emergency you are to call ADNEC Security. ADNEC Security will notify the relevant emergency services. In addition to notifying ADNEC Security notify the closest event staff member of the emergency.

- **Venue Security:** +9712 406 4444
- **ADNEC Clinic:** +9712 406 4456
- **Operations Safety:** +971 50 2870020

IMPORTANT INFORMATION FROM THE UAE GCAA

UAE Law stipulates the following in relation to UAV operations:

<https://www.government.ae/en/information-and-services/justice-safety-and-the-law/aviation-safety>

TIPS FOR GUESTS OF THE UAE

DRIVING

- Right turn on red is illegal unless there is a right turn lane
- Drivers will flash their lights if they want to pass you. They aren't being aggressive (usually) it's just the way it's done here.
- Do not park somewhere that is not a designated parking place. You will get ticketed or worse.
- When driving be sure to have the rental agreement, your home country driving license, and your passport and visa with you.
- Check if you are in a paid parking place before leaving your car -chances are that you are if parked on the street.
- Don't text and drive – it is illegal
- Stay calm when driving – greeting another driver with an obscene gesture is illegal
- Drunk driving is met with zero tolerance in the UAE. This means there is no legal limit, if you have drunk alcohol at all and drive you are committing a serious legal offence.

GENERAL BEHAVIOUR

- Cursing at someone is an illegal offence in the UAE. Using foul language in public could get you in to trouble, at best you will be looked upon very badly both by citizens and expats.
- Do not take pictures of anyone without their consent. Especially do not take pictures of women in traditional dress.
- Don't spit and don't litter – this is also an illegal offence.
- If someone does not understand you don't raise your voice and say the same thing only louder. That won't help, it just opens the door for a misunderstanding.
- If you feel like something you or someone around you is doing may be disrespectful or rude it probably is.
- Don't disturb someone who is praying. You will see people praying in places you wouldn't expect. Leave them be until they are done.
- Public displays of affection should be minimal – holding hands with your husband or wife is acceptable but kissing and hugging in public is not.
- Noise disruptions, bad language, making obscene gestures and showing disrespect in any way to Dubai's religion or its leaders are all forbidden and may land you in legal trouble.
- Drinking in public is illegal.

INVITATIONS AND INTERACTIONS

- If you are invited to a Majlis (a gathering usually at someone's home), remove your shoes at the entrance.
- Males and Females may sometimes be escorted to different sections.
- If you are sharing a meal with your host, accept food and refreshment before moving on to matters of business.
- It is important to stand up for new guests and older or higher-ranking people, and men are expected to stand when a woman enters the room.
- When greeting a member of the opposite sex who is Muslim, it is important not to offer to shake hands unless they extend their hand first – both men and women (more commonly women) may prefer not to shake hands with the opposite sex due to religious reasons.
- It is customary to accept food and drink with your right hand; this is also the hand you should eat with.
- Avoid showing the soles of your feet, or pointing your foot at anyone. If you are sitting in front of an important guest, it is considered rude to cross your legs.
- If you are hosting Muslim guests, do not offer alcoholic beverages or pork.

GETTING AROUND

- Some ATM machines will give you the money before they give you the card back. In many places this is opposite, make sure you get your card before leaving the ATM.
- Keep a bit of cash on you. You may find somewhere to eat that doesn't take credit or you may want to hop a cab that doesn't.
- Often you will not be able to find shops that are open on Friday mornings.
- Friday is to the Muslim world as Sunday is to the Christian world.
- The weekend is Friday and Saturday
- In most hotels there is a switch near the bathroom that you must turn on to turn the water heater on.
- Don't enter Mosques unless you are a Muslim. However everyone is welcome at The Sheikh Zayed Grand Mosque on a tour and it is highly recommended you take the time to see the Grand Mosque.
- Be patient and respectful and you'll have a great time in the region and learn a plethora of interesting and cool things.



THANK YOU