2016 CIAM PLENARY MEETING

CIAM & DRONE

CASI decision relative to UAV

Meeting Rotterdam 23 September 2015

- **Transfer from CASI to CIAM of the FAI activities relative to Unmanned Aerial Vehicle** (Class U)
- **CASI argumentation**
  - Drone is a 'hot' worldwide subject at the moment and has to be handled globally by FAI regarding impact on sport CIAM activities
  - The same product can be used both for commercial and recreational / sportive purposes
  - CIAM has the focus on the subject and the expertise to handle all types of drones records and CASI is not the best place to develop record activities
  - Allows reduction of the number of sub-classes for records

Definitions

- **Model Aircraft** (Class F)
  a) A model ***aircraft*** is an aircraft of limited dimensions, with or without a propulsion device, not able to carry a human being and to be used ***for competition, sport or recreational purposes***
  b) For the whole flight, a radio-controlled model aircraft must be within visual line of sight (VLOS) of the person who assumes directly its control or who is in a situation to take the direct control at any moment, including if the model is being flown automatically to a selected location
- **Visual line of sight** (VLOS)**:** direct unaided (other than corrective lenses) visual contact with the model aircraft to monitor its flight path and meet separation and collision avoidance responsibilities
- **UAV** (Class U)**:** An ***aerodyne*** with means of propulsion that does not carry a human, and which is designed ***for scientific research, commercial, governmental or military purpose***

CIAM Bureau position

- **Acceptance under the following considerations**
- **Restriction for UAV to sports activities (records) and only for civil purpose** considering aims fixed by FAI to CIAM
- **Regarding the VLOS requirement applicable to aeromodelling**, CIAM must consider the risk to deviate with UAV record activities from this basic principle
- **Cautious to wait orientations to be defined for drone by the safety and regulation of civil aviation authorities** (especially EASA and FAA)

➥ ***Inclusion of the Sporting Code Section 12*** *(Class U records activities)* ***in Section 4*** *(Volume "CIAM Records Rules")*

‘Drones’ regulatory context is moving

- **International Civil Aviation Organization** (ICAO)**:** Remotely Piloted Aircraft Systems Panel (RPASP) created to produce for 2018 a draft Standards and Recommended Practices (SARPs) focused on international operations
- **European Aviation Safety Agency** (EASA)
  - ‘Introduction of a regulatory framework for the operation of drones’
  - Technical Opinion (18 December 2015) ‘Introduction of a regulatory framework for the operation of unmanned aircraft’ related to the A-NPA 2015-10 (31 July 2015)
  - Unmanned aircraft defined as ‘*any aircraft operated or designed to be operated without a pilot on board’*
    Term ‘*drone*’ used in communications addressing the general public
- **Federal Aviation Administration** (FAA)**:** Registration of all small UAS (weight between 0.55 and 55 pounds) including model aircraft (21 December 2015)

➥ *CIAM must take care of this moving regulatory context*

CIAM general considerations

- **Impact of technology on the actual FAI model aircraft classes** *(competition and records)*
  - Actual FAI model aircraft classes are defined for competition purposes only
  - Use of electronic devices offers possibility of increased performances

  ⇨*Each CIAM Sub-Committee defines how such devices can (or cannot) be used and the appropriate requirements and limitations*

- **New types of aircraft with possibility of different events** *(recreational, competition and records)*
  - CIAM must take attention on new activities possible with current available technology especially FPV Racing
  - CIAM must show its interest for new types of model aircraft such as multi-rotor (multi-copter)

CIAM UAV Working Group

- **Terms of Reference:** Version 1.0 - June 2014
- **Mission**
  - Evaluation of the impact for CIAM activities of the current available technology especially regarding the sporting activity and events
  - Preparation of a draft rule to be considered as a base for future sporting events and consider whether a test event can be organized
- **Produced documents**
  - **UAV WG Report** Edition 2 - 20 January 2015 (final report as evaluated by the CIAM Bureau and presented at the CIAM Plenary Meeting)
  - **Draft Rule for Drone Model Aircraft Events** Edition 1 - 1st May 2015 covering two types of events**:**
    - Contest event for multi-rotors (FPV Racing and Freestyle Aerobatics)
    - Recreational event for based on a list of flight tasks to be done (for multi-rotors and/or fixed wing drones)
- **Term:** appointed from June 2014 to April 2015

CIAM Organising Committee for FAI International Events for Drones

- **Terms of Reference:** published in July 2015
- **Mission**
  - Identify contact persons in FAI members countries interested in sporting events for drones
  - Define the best format for FAI International Sporting Events to be organised from 2016 and common rules for these events
  - Encourage organisation of FAI International Sporting Events for Drones in as many countries as possible
  - Find partners and sponsors for the FAI International Sporting Events for Drones
  - Work closely with the FAI Media and Communication office to make all this activity public
- **Term:** appointed from 1st July 2015 to 2017 CIAM Plenary Meeting

Composition of the CIAM Organising Committee for FAI IED

- **Chairman**: Bruno DELOR - France (CIAM 1st VP and CIAM delegate)
- **Members:**
  - Bob BROWN – USA (CIAM Delegate)
  - Robert HERZOG - Belgium (CIAM Delegate)
  - John LANGFORD - USA (CIAM Space Models Delegate)
  - Bengt LINDGREN - Sweden (CIAM Delegate and CASI member)

⇨ ***In addition, CIAM drone contact persons (PoC) identified in about 20 FAI members countries***

Context analysis

- **CIAM must be proactive and flexible** regarding drones sport activities if we want to be an effective and recognized actor in that field.

  We have to consider that drone sport concerns a new breed of participants (pilots and investors) who generally **never** heard about FAI and CIAM, or national established bodies, or even regulations authorities

- **FPV Racing has a high potential of development**
  - Rapid worldwide development
  - Exciting for competitors
  - Well adapted for spectators (possibility to report pilot video camera view on large screens), for medias (possibility of a large audience by use of Watch HD Live Streaming video possibilities) and for sponsors

⇨ ***Priority for 2016 on Multi-rotor FPV Racing***

Strategy for FPV Racing development

- **CIAM Bureau has accepted** (3 and 4 December Meeting in Dubai)
  - F3U 'RC Multi-rotor FPV Racing' as a provisional class to be effective 1st January 2016
  - FPV Racing World Cup (F3U) effective in 2016 in case of a minimum of 5 FAI Open International organised on the year
- **Volume 'Radio Control FPV Racing Model Aircraft'** published on the FAI website beginning of January 2016
- **Content of the Volume:**
  - Regarding the provisional statute of the F3U class, not subject to Plenary Meeting approval, nor is it restricted by any rule freeze regulation
  - May be updated at any time during the year under the direct control of CIAM Bureau on recommendation from the CIAM Organising Committee for FAI IED

⇨ *Formal approval of the Plenary Meeting requested*

F3U main rules *(1/2)*

- **FPV Racing:** 4, 6 or 8 multi-rotor flying together on a racing circuit
- **FPV** (First Person View)**:** the pilot (assisted by an helper) is equipped with a headset goggle (or with a screen) to pilot the model from the video picture of the onboard camera transmitted in real time
- **Specifications of the model**
  - Total weight (including batteries) < 1 kg
  - Electric propulsion (maximum voltage of 17.0 volts)
  - Distance between axes of the engines < 330 mm
  - Maximum diameter of the propellers 6 inches (15.2 cm)
  - Fail-safe device mandatory with possibility to stop the engines
- **Racing circuit**
  - Minimum developed size of 250 m for an outdoor field (80 m Indoor or in woods)
  - Shall be within a 180 m x 100 m rectangle
  - 3 to air gates to cross, and in addition possibility of obstacles (natural or artificial) to cross or avoid

F3U main rules *(2/2)*

- **Contest with three stages:**
  - Qualification stage to select the required number of competitors for the elimination stage
  - Elimination stage with successive rounds from 1/8th final to semi-final
  - Final
- **Qualification and the elimination stages**
  - Each round is organised by groups (subdivision of the round corresponding to the number of pilots flying at the same time in the same race)
  - **Option 1:** race with a number of circuit laps to realize (3 to 5 recommended)

    Option 2: race on an allocated flying time (2 to 3 minutes recommended)
- **Start of each race:** on a start line or on a grid pattern as for Formula 1 start
- **1 judge for each pilot:** in charge of checking all aspects of the competitor's racing on the circuit and of timekeeping when necessary

F3U racing circuit

FPV Racing

Other Drone Racing initiatives

- **World Organization of Racing Drones** (WORD) and **World Drone Prix** (March 2016 in Dubai) announced 12 December ($ 1.000.000)

  ⇨ *http://droneworlds.com/*

- **2016 World Drone Racing Championships** (20 to 22 October at Kualoa Ranch in Hawaï) announced in October 2015 ($ 200.000 cash)

  ⇨ *http://www.worlddroneprix.com*

- **European Rotor Sport Association** (WRSA)
  - Promotion and development of drone sports
  - Wish to be an Associate member of FAI with regards to drone sports

  ⇨ *Memorandum of Agreement with FAI/CIAM*

Thank you for your attention

Place to questions or comments if you have some

Breizh FPV Racing 35 - Plerguer - France) :
https://www.youtube.com/watch?v=Muyxi9dpVvA