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Pursuant to Article 142, paragraph 5 of the Air Traffic Act ("Official Gazette", number 69/09, 84/11, 54/13, 127/13 and 92/14), The Minister of the Maritime Affairs, Transport and Infrastructure adopts:

## **ORDINANCE ON UNMANNED AIRCRAFT SYSTEMS**

### **PART 1**

#### **General provisions**

##### Scope

##### Article 1

- (1) This Ordinance prescribes requirements for the safe use of Unmanned Aircraft with an operating mass of up to and including 150 kilograms, and requirements for the for persons involved in the Unmanned Aircraft and Unmanned Aircraft Systems operations.
- (2) The provisions of this Ordinance shall not apply to Unmanned Aircraft Systems:
  - (a) while carrying out military, customs, police, search and rescue, firefighting, border control, coastguard or similar activities, undertaken in the public interest, or
  - (b) when used indoors.

##### Terms and abbreviations

##### Article 2

- (1) *Unmanned Aircraft*: Aircraft used for flights without a pilot on board, that is remotely controlled or programmed and autonomous,
- (2) *emergency response effort*: activities connected with firefighting, search and rescue, emergency medical aid, etc.,
- (3) *ICAO*: International Civil Aviation Organization,
- (4) *controlled airspace*: airspace of defined dimensions within which air traffic control service is provided in accordance with the airspace classification,
- (5) *flight beyond visual line of sight (BVLOS)*: flight of an Unmanned Aircraft System, where the remote pilot doesn't have the Unmanned Aircraft in his/her line of sight,
- (6) *flight within visual line of sight (VLOS)*: flight of an Unmanned Aircraft System, where the remote pilot has a constant visual contact with the Unmanned Aircraft, without using optical or electronic aids. Contact lenses or corrective glasses are not considered as optical aid,

- (7) *flight operations*: use of Unmanned Aircraft Systems for areal work (such as aerial photography, aerial advertising, aerial surveillance, scientific and research flights, etc.), regardless of whether for consideration or not,
- (8) *first person view (FPV) flying*: mode of operation of an Unmanned Aircraft System where the remote pilot operates the Unmanned Aircraft using images from a camera installed on it,
- (9) *populated area*: area primarily intended for residential, business or recreational purposes, which contains residential buildings and houses, schools, offices, sports facilities, parks, etc.,
- (10) *uncontrolled aerodrome*: aerodrome on which Air Traffic Control (hereinafter referred to as the ATC) services are not provided, according to the Air Traffic Act a controlled aerodrome out of working hours of its competent ATC unit is considered as an uncontrolled aerodrome,
- (11) *unpopulated area*: area which isn't a populated area, in which apart from remote pilots and other participants, only occasional passage without the retention of people is allowed (cyclists, walkers, etc.),
- (12) *dangerous goods*: articles or substances which are capable of posing a risk to health, safety, property or the environment and which are shown in the list of dangerous goods in the ICAO Technical instructions for the safe transport of dangerous goods by air, or those which are classified according to those instructions,
- (13) *hazard*: conditions or an object with the potential to cause death or injury to a person, damage to equipment or structure, loss of material or reduction in the ability to perform a prescribed function,
- (14) *Unmanned Aircraft operating mass*: total mass of an Unmanned Aircraft at the moment of take-off,
- (15) *Unmanned Aircraft System operator*: natural or legal person engaged in flight operations by an Unmanned Aircraft System (hereinafter referred to as the Operator),
- (16) *remote pilot*: natural person responsible for the safe conduct of an Unmanned Aircraft flight by operating its flight controls, either by manual use of the remote controls, or when an Unmanned Aircraft flies automatically, by monitoring its course with the possibility of intervention and change of direction at any time. In terms of provisions of the Air Traffic Act, the remote pilot is considered to be the pilot-in-command,
- (17) *flying area*: the airspace within which an Unmanned Aircraft flight is conducted,
- (18) *aerodrome reference point*: the designated geographical location of an aerodrome,
- (19) *risk*: the predicted probability and severity of the consequences or outcomes of a hazard,
- (20) *assembly of people*: people who are assembled in a certain area where they don't have enough space to evade an Unmanned Aircraft and/or to avoid collision with it (e.g. gathered at a concert, celebration, demonstration or using areas of public interest such as beaches, amusement parks, playgrounds etc.),
- (21) *Unmanned Aircraft System*: system consisting of an Unmanned Aircraft and other equipment, software or add-ons necessary for its remote control,
- (22) *technical instructions*: technical instructions for the safe transfer of dangerous goods by air (ICAO Doc 9284), approved in accordance with the procedure established by the ICAO Council, which is issued periodically, and
- (23) *model aircraft*: Unmanned Aircraft used for the purposes of conducting leisure flights or sport.

## Unmanned Aircraft markings

### Article 3

- (1) The operator shall ensure that the Unmanned Aircraft involved in flight operations is marked with:
  - (a) A non-flammable identification plate, or
  - (b) An identification label for Unmanned Aircraft with operating mass below 5 kg.
- (2) The owner of a model aircraft shall ensure that the model aircraft with operating mass of more than 5 kg is marked with a non-flammable identification plate.
- (3) A non-flammable identification plate or an identification label shall contain the following information:
  - (a) Name, address and contact information of the operator or the owner, as applicable, and
  - (b) Unique identification mark for the Unmanned Aircraft, for the conduct of category C2 flight operations which is assigned by the Croatian Civil Aviation Agency (hereinafter referred to as the Agency).
- (4) The non-flammable identification plate or an identification label shall be of adequate size that allows clear identification of information from laid down in paragraph 3 of this Article.

## **PART 2**

### **Rules of the air**

#### Rules of the air

### Article 4

- (1) It is allowed to fly an Unmanned Aircraft:
  - (a) by day,
  - (b) in uncontrolled airspace up to 120 m above the surface or up to 50 m above the obstacle, whichever is greater,
  - (c) in controlled airspace outside a radius of 5 km from the aerodrome reference point up to 50 m above the surface,
  - (d) at a distance of at least 3 km from thresholds and edges of an uncontrolled aerodrome runway, except where specific procedures for the flights of Unmanned Aircraft are depicted in the aerodrome's instructions for use (Figure 1-1),
  - (e) in such a way that the horizontal distance of an Unmanned Aircraft from a assembly of people is not less than 50 m, except when an Unmanned Aircraft is taking part in a flying display,
  - (f) in such a way that the horizontal distance from uninvolved people is not less than the flight altitude and not less than:
    - i. 5 m when the low-speed mode is activated on the Unmanned Aircraft, and when the maximum speed of 3 m/s is set, or
    - ii. 30 m in all other cases,

- (g) in visual line of sight, and
- (h) upon establishment of the ad hoc structure in accordance with the applicable airspace management regulation.

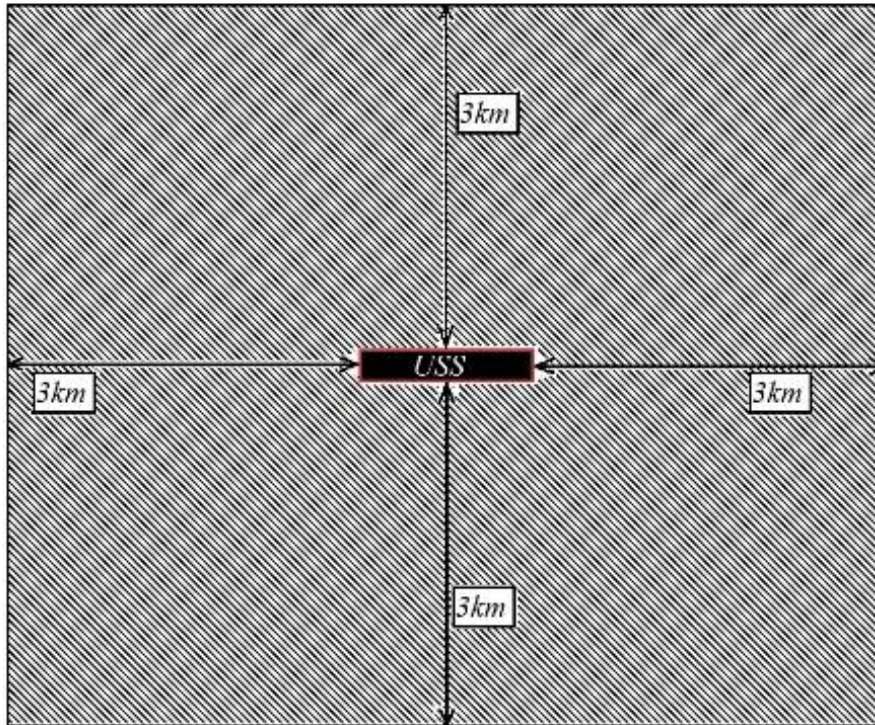


Figure 1-1

The minimum distance from the edges and thresholds of the uncontrolled aerodrome runway

- (2) When an Unmanned Aircraft is used for leisure flights or sport it is allowed:
  - (a) to conduct a flight via FPV mode,
  - (b) to fly in an unpopulated area only, and
  - (c) by way of derogation from provisions of Paragraph 1 (b) of this Article, to fly on altitude of more than 120 m above the surface.
- (3) With an Unmanned Aircraft it is not allowed to:
  - (a) transport dangerous goods, freight, people or animals,
  - (b) drop items during the flight, and
  - (c) conduct a flight over an assembly of people.

## Duties and responsibilities of a remote pilot

### Article 5

- (1) A remote pilot shall:
  - (a) operate an Unmanned Aircraft in a safe manner, without jeopardizing life, health or property on the ground or in the air, and without disturbing the public order and peace,
  - (b) operate an Unmanned Aircraft in accordance with applicable regulations, Flight Manual or instructions for use and Operations Manual when applicable,
  - (c) check the integrity of the Unmanned Aircraft System before flight,
  - (d) check if the Unmanned Aircraft is marked in accordance with Article 3 of this Ordinance,
  - (e) secure the perimeter of the take-off and landing area,
  - (f) collect all necessary information for the planned flight and make sure that weather and other conditions in the flight area ensure a safe flight conduct,
  - (g) ensure that all equipment or cargo is properly attached to Unmanned Aircraft in a way to prevent unintentional drop off,
  - (h) operate an Unmanned Aircraft in a manner to clear all obstacles during take-off or landing,
  - (i) to constantly scan the airspace in which the flying of Unmanned Aircraft is conducted so as not to endanger other aircraft, and
  - (j) give way to manned aircraft.
- (2) Remote pilot should not operate:
  - (a) with more than one Unmanned Aircraft at once, and/or
  - (b) within the area in which emergency response effort is being conducted.

## **PART 3**

### **Flight operations**

#### Flight operations categorization

### Article 6

The operator shall conduct flight operations in accordance with requirements from Table 1.

| Flight operations category | UNMANNED AIRCRAFT                |  | CONDUCT OF FLIGHT OPERATIONS |                                   | REQUIREMENTS FOR THE REMOTE PILOT                           |  | REQUIREMENTS FOR THE OPERATOR                 |  |
|----------------------------|----------------------------------|--|------------------------------|-----------------------------------|---|--|---|--|
|                            | Unmanned Aircraft operating mass | The highest speed of an Unmanned Aircraft according to the manufacturer's technical specifications | Part of the day              | Area of flight operations         | Minimum age   | Necessity of taking theoretical / practical exams  | Obligation to register / approve the operator | Operator documentation   |
| <b>A</b>                   | <b>OM &lt; 250 g</b>             | < 19 m/s   | Day and/or night             | Unpopulated and/or populated area | Not applicable  | Not applicable   | Not applicable                                | Not applicable   |
| <b>B1</b>                  | <b>250g ≤ OM ≤ 900g</b>          | < 19 m/s   | Day                          | Unpopulated area                  | 14 years, or less than 14 years but under adult supervision | Not applicable   | Not applicable                                | Not applicable   |
| <b>B2</b>                  | <b>OM &lt; 5kg</b>               | Not applicable   | Day and/or night             | Unpopulated and/or populated area | 16 years  | Not applicable   | Registration                                  | Not applicable   |
| <b>C1</b>                  | <b>5 kg ≤ OM &lt; 25kg</b>       | Not applicable   | Day                          | Unpopulated area                  | 18 years  | Passed theoretical knowledge examinations provided by Agency   | Registration                                  | Not applicable   |
| <b>C2</b>                  | <b>5 kg ≤ OM ≤ 150kg</b>         | Not applicable   | Day and/or night             | Unpopulated and/or populated area | 18 years  | a) Passed theoretical knowledge examinations provided by Agency<br>b) Demonstration of flight preparation and flying | Approval                                      | a) Operations Manual<br>b) Flight records<br>c) Safety risk assessment |

Table 1

## Derogations in flight operations

### Article 7

- (1) By way of derogation from provisions of Article 4, Paragraph (1) (a) of this Ordinance, flight operations may also be conducted at night in accordance with the provisions of Articles 6 and 8 of this Ordinance.
- (2) By way of derogation from provisions of Article 4, Paragraph (1) (b) of this Ordinance, flight operations are permitted to be conducted in uncontrolled airspace at an altitude of more than 120 m above the surface, provided that the approval from the Agency has been obtained.
- (3) By way of derogation from provisions of Article 4, Paragraph (1) (c) of this Ordinance, flight operations may be conducted in controlled airspace within a radius of 5 km from the reference point of the aerodrome and at altitudes greater than 50 m above surface, provided that the approval from the competent ATC unit has been obtained.
- (4) By way of derogation from provisions of Article 4, Paragraph (1) (d) of this Ordinance, flight operations may be conducted at a distance lesser than 3 km from thresholds and edges of an uncontrolled aerodrome runway, provided that the approval from the Operator of the uncontrolled aerodrome has been obtained.
- (5) By way of derogation from provisions of Article 4, Paragraph (1) (e) of this Ordinance, flight operations may be conducted at a distance lesser than 50 m from the assembly of people, provided that the approval from the Agency has been obtained.
- (6) By way of derogation from provisions of Article 4, Paragraph (1) (f) (ii) of this Ordinance, flight operations may be conducted at a distance lesser than 30 m from people, provided that the approval from the Agency has been obtained.
- (7) By way of derogation from provisions of Article 4, Paragraph (1) (g) of this Ordinance, flight operations may be conducted beyond the visual line of sight, provided that the approval from the Agency has been obtained.
- (8) By way of derogation from provisions of Article 4, Paragraph (3) (a) of this Ordinance, it is permissible to transport dangerous goods only when the Unmanned Aircraft is used for the purposes of agriculture or forestry.
- (9) By way of derogation from provisions of Article 4, Paragraph (3) (a) of this Ordinance, it is permissible to transport freight, provided that the approval from the Agency has been obtained.

- (10) By way of derogation from provisions of Article 4, Paragraph (3) (b) of this Ordinance, flight operations with the purpose of in-flight items dropping may be performed, provided that the approval from the Agency has been obtained.
- (11) By way of derogation from provisions of Article 5, Paragraph (2) (a) of this Ordinance, it is permissible to conduct flight operations with multiple Unmanned Aircraft at the same time, provided that the approval from the Agency has been obtained.

#### Equipment of the Unmanned Aircraft for the conduct of flight operations at night

##### Article 8

- (1) An Unmanned Aircraft shall be equipped with lights that ensure the determination of orientation of the Unmanned Aircraft in airspace.
- (2) Lights on the Unmanned Aircraft shall be visible to the remote pilot during the whole flight.

#### Operator's duties and responsibilities

##### Article 9

- (1) The operator shall ensure:
  - (a) that flight operations are conducted in accordance with applicable regulations, Flight Manual or instructions for use and Operations Manual when applicable,
  - (b) that flight operations are conducted without jeopardizing life, health or property on the ground or in the air, and without disturbing the public order and peace, and
  - (c) that the remote pilot has received the correct instructions, has demonstrated his/her ability to conduct flight operations and is aware of his/her responsibilities and relation of such tasks with the operation as a whole.
- (2) The operator shall establish a reporting system on safety related events in civil aviation according to the applicable regulation.

#### Flight records

##### Article 10

- (1) The operator shall establish a system of record-keeping in accordance with the provisions of Article 6 of this Ordinance, which shall contain the following information:
  - (a) identification mark,
  - (b) date of flight,
  - (c) the start time and finish time of flight operations and flight duration,
  - (d) name of the remote pilot,
  - (e) flight operations location, and
  - (f) remarks on the significant events occurred during flight operations.



(2) Flight Records shall be kept for at least two years after the date of the flight.

## Risk management

### Article 11

- (1) An Operator with an approval for category C2 flight operations shall establish, implement and document the procedures of hazard identification and related risk management.
- (2) The procedure prescribed in Paragraph 1 of this Article shall include risk identification, risk assessment and risk mitigation measures to an acceptable level.
- (3) Records of risk management prescribed in Paragraph 1 of this Article shall be kept for at least three years.

## Operations manual

### Article 12

- (1) The Operations Manual shall include at least the following parts and instructions:
  - (a) Table of contents,
  - (b) Record of revision and list of effective pages,
  - (c) Duties and responsibilities of personnel involved in the activities of operator,
  - (d) Standard operating procedures,
  - (e) Unmanned Aircraft Systems maintenance,
  - (f) Emergency procedures,
  - (g) Flight operations limitations,
  - (h) Reporting,
  - (i) Risk management,
  - (j) Remote pilot's training, and
  - (k) Record-keeping.
- (2) Operations Manual shall be continuously compliant with applicable rules and Flight Manual or instructions for use.
- (3) The operator shall ensure access to the Operations Manual to all personnel involved in Operator's activities.
- (4) Personnel involved in Operator's activities shall be familiar with the parts of the Operations Manual related to their duties and responsibilities.

## Operator's registration

### Article 13

- (1) The Agency shall keep records of Unmanned Aircraft operators.
- (2) The operator shall:
  - (a) register in accordance with the requirements of Article 6 of this Ordinance and in a form and manner established by the Agency,
  - (b) notify the Agency of any change in the registration prescribed in Paragraph 1 of this Article within 10 days, and
  - (c) notify the Agency about flight operations termination.

## Agency Approvals

### Article 14

- (1) The operator shall submit the application for approval in a form and manner established by the Agency.
- (2) Approvals prescribed in Article 7, Paragraphs 2, 5, 6, 7, 9, 10 and 11 of this Ordinance shall be issued:
  - (a) provided that there is a justified operational need,
  - (b) provided that the operator has demonstrated the ensurance of an acceptable level of safety, and
  - (c) for the duration determined by the Agency, considering the level of the risk that flight operations represent for the environment in which it is carried out.
- (3) For issuing approvals, the Agency may inspect the operator and request demonstration flights.
- (4) Approval for the conduct of category C2 flight operations shall be issued for a maximum of three years.

## Mandatory documentation

### Article 15

When performing flight operations, a remote pilot shall have following documentation:

- (a) Flight Manual or instructions for use of Unmanned Aircraft Systems,
- (b) Original or a certified true copy of the Agency Approval, if applicable,
- (c) Insurance policy issued in accordance with a dedicated regulation, and
- (d) Operations Manual, if applicable.

## PART 4

### Transitional and final provisions

#### Article 16

- (1) Operator's Declaration for an Unmanned Aircraft with the operational mass less than 5 kg for the conduct of categories A and B flight operations, submitted in accordance with the Ordinance on Unmanned Aircraft Systems ("Official Gazette", number 49/15 and 77/15) shall be recognized in the registration procedure as an Unmanned Aircraft operator who intends to conduct category B2 flight operations after the entry of this Ordinance into force.
- (2) Operator's Declaration for the conduct of category C flight operations, submitted in accordance with the Ordinance on Unmanned Aircraft Systems ("Official Gazette", number 49/15 and 77/15) shall be recognized in the registration procedure for the conduct of category C1 flight operations for 6 months after the entry of this Ordinance into force.
- (3) Approval for the conduct of category D flight operations issued prior to the entry of this Ordinance into force shall be considered as a category C2 flight operations approval.
- (4) Approval for flight operation issued prior to the entry of this Ordinance into force shall be valid until the date of expiration of validity.
- (5) The certificate of passed theoretical knowledge exam for the Operator of the Unmanned Aircraft Systems issued in accordance with the Ordinance on Unmanned Aircraft Systems ("Official Gazette", number 49/15 and 77/15) shall be deemed valid after the entry of this Ordinance into force
- (6) Approval for flight operation issued prior to the entry of this Ordinance into force shall be considered invalid, provided that the Operator obtained an approval within the provisions of this Ordinance

#### Entry into force

#### Article 17

- (1) This Ordinance shall enter into force on 15<sup>th</sup> December 2018.
- (2) With date of entry into force of this Ordinance, the Ordinance on Unmanned Aircraft Systems ("Official Gazette", number 49/15 and 77/15) shall cease to be in force.
- (3) With date of entry into force of this Ordinance, the Ordinance on design, acceptance, construction and maintenance of aircraft on which the Regulation EZ 216/2008 is not applicable ("Official Gazette", number 77/16) shall cease to have effect on:
  - (a) the model aircraft,
  - (b) the Unmanned Aircraft Systems used for flight operations categories A, B1, B2 and C1, and

(c) the Unmanned Aircraft Systems used for flight operations category C2 and whose operating mass is less than 25 kilograms.

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