

New drone law project translation

The transmission of the data mentioned in I of Article R. 20-24-2 of the Post and Electronic Communications Code has the following characteristics:

- 1 ° The signaling message consists of a single wifi frame;
- 2 ° The signaling message is not encrypted;
- 3 ° The reference of the geodetic system is WGS84. The coordinates are transmitted in degrees / decimals of degrees:
 - the latitudes transmitted are included in the range [- 90 ° ; + 90 °
 - the longitudes transmitted are included in the interval] - 180 ° (excluded); + 180 ° (inclusive)].
- 4 ° The transmitted road, true road, takes as reference the geographical north;
- 5 ° The data are transmitted in units respecting the International System:
 - speed in meters per second,
 - altitude in meters.
- 6 ° The transmission coding system is UTF-8;
- 7 ° The time base is UTC + 00/00;
- 8 ° The transmission of the signaling message takes place as soon as the aircraft is flown until the landing of the aircraft and periodically on the first of the following temporal and spatial terms:
 - 2 ping signals are separated by not more than 3 seconds;
 - 2 shipments are separated by no more than 30 meters.

II - The transmission format of the data mentioned in I of Article R.20-24-2 of the Post and Electronic Communications Code complies with the following specifications:

1 ° The transmission protocol complies with IEEE 802.11 amendment N [in the version published on the date of publication of this decree (IEEE 802.11-2016).]

- a) the Wi-Fi 802.11n frame is of type 0 (management packet) and subtype 6;
- b) the frequency band used is the 2.4 GHz band. The WIFI channels used are those used in France;
- c) the signaling message takes place in the payload portion of the Wi-Fi 802.11n frame. The message corresponds to an 802.11n Wi-Fi frame transiting over a wireless network in AD-HOC mode.

2 ° The format of the Wi-Fi 802.11n frame is defined as follows:

- a) The fields of the frame control part are defined as follows:
 - Frame type: 0
 - Subtype Frame: 6
 - More Fragment: 0
 - Retry: 0
- b) The fields of the 802.11n frame following the frame control field shall be defined as follows:
 - Address 1: FF.FF.FF.FF (broadcast convention),
 - Address 2: Address of the issuing card of the electronic or digital signaling device.
- 3 ° The format of the payload is defined as follows and respects the set order:
 - (a) the payload header is coded to 15 octets in total, consisting of the following:
 - protocol number coded on 2 bytes. It is set at 1;
 - version of the protocol coded on 1 byte. It is fixed at 1;
 - timestamp encoded on 6 bytes, is of the form YYYYMMDDHHMMSS (year, month, day, hour, minute, second). It corresponds to that of sending the frame.
 - frame number coded on 2 bytes, is reset to zero each time the drone is powered up; - size of the mandatory data: 2 bytes;
 - optional data size: 2 bytes.

b) the signaling message is coded on a total of 53 bytes, consisting of:

- the identifier of the drone, coded on 30 bytes composed of the following three fields:

the manufacturer trigram is coded on 3 bytes;

- the model of the aircraft (for an aircraft flown without a person on board with an integrated electronic or digital signaling system) or model of the electronic or digital signaling device (for a non-integrated electronic or digital signaling system) coded on 3 bytes;

- the aircraft serial number (for an aircraft flown without a person on board with an integrated electronic or digital signaling system) or electronic or digital signaling device model (for a non-integrated electronic or digital signaling system) coded 24 bytes. In the case where the serial number has less than 24 characters, 0's will be added upstream of it.

the position of the aircraft without any person on board at the time of sending the coded message on 10 bytes, consisting of the following fields:

- 4-byte coded latitude; the information is broken down into two parts: the sign bit (MSB) and its mantissa. The exponent is fixed and has a value of 5. Thus, all data has 5 decimals: XXX.XXXXX;

- longitude coded on 4 bytes; the information is broken down into two parts: the sign bit (MSB) and its mantissa. The exponent is fixed and has a value of 5. Thus, all data has 5 decimals: XXX.XXXXX;

- altitude coded on 2 bytes; expressed in meters, above mean sea level, absolute altitude.

- the position of the take-off point of the aircraft without a person on board coded on 10 bytes, composed of the following fields:

- 4-byte coded latitude; the information is broken down into two parts: the sign bit (MSB) and its mantissa. The exponent is fixed and has a value of 5. Thus, all data has 5 decimals: XXX.XXXXX;

- longitude coded on 4 bytes; the information is broken down into two parts: the sign bit (MSB) and its mantissa. The exponent is fixed and has a value of 5. Thus, all data has 5 decimals: XXX.XXXXX;

- altitude coded on 2 bytes; expressed in meters, above mean sea level, absolute altitude.

- the speed coded on 1 byte; in meters per second; - the 2-byte coded route; in degrees from 0 ° to 359 °

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The manufacturer's trigram is assigned by the minister in charge of civil aviation which ensures the uniqueness. It is obtained by each manufacturer through CERFA XXX.