Galerie Agora,
Rue du Marché aux Herbes 105, Bte 11
B-1000 Brussels
Telephone +32 2 285 46 60
Fax +32 2 280 08 17
Email: etf@etf-europe.org
www.etf-europe.org

European Transport Workers' Federation
Fédération Européenne des Travailleurs des Transports
Europäische Transportarbeiter-Föderation
Federación Europea de los Trabajadores del Transporte

Brussels, 15 December 2016

ETF VIEWS ON REMOTELY PILOTED AIRCRAFT SYSTEMS (RPAS)

I. INTRODUCTION

Today, unmanned aircraft[1] are being used among other things for aerial filming and photographing, safety inspections of pipelines or buildings or by farmers. Tests are being performed for delivery of goods or even transport of passengers.

The *Aviation Strategy for Europe* presented by the Commission in December 2015 states: "*unmanned aircraft share the same airspace with other aircraft* [and therefore] *the safety of their operations must remain coherent with the overall aviation safety policy. Finally, unmanned aircraft operations must also be consistent with air traffic rules as laid down in the Common Rules of the Air.*"

Due to the rapid development of RPAS, the ETF strongly supports the inclusion of RPAS into the scope of the EASA Basic Regulation, as well as other regulatory initiatives aiming to ensure a safe co-existence of manned aircraft and RPAS in line with the principle "one sky – one safety".

II. POSSIBLE RISKS

Collision risks

The consequences of a collision between a RPAS and a manned aircraft can be disastrous:

[1] *As the name suggests, an unmanned aircraft is an aircraft which has no crew or passengers on board. There are several terms in use:*

- *unmanned aircraft system (UAS)*
- *unmanned aerial vehicle (UAV)*
- *remotely piloted aircraft system (RPAS)*
- *unmanned-aircraft vehicle system (UAVS)*
- *drone (popular expression)*

Although the general concept remains the same, distinction can be made between an autonomous aircraft (controlled by onboard computers) and a remotely controlled aircraft (controlled by a person on ground). All of these aircraft fall under the scope of the Chicago Convention.

- collision against a cockpit window may affect the visual capacity of the pilot and consequently compromise his capacity to perform a safe landing
- a battery-powered RPAS sucked into a jet engine can cause an uncontained explosion and affect vital networks of the aircraft (electricity, hydraulic) making the aircraft uncontrollable
- collision between a RPAS and a helicopter rotor can cause immediate crash of the aircraft

So far, there is no reliable data available as to the impact of a collision between a RPAS and an aicraft.

Human factor

The human factor plays an important role in terms of interface between a manned aircraft and a RPAS. The instincts of birds drive them to avoid aircraft and therefore, pilots are trained to maintain the trajectory when seeing a bird (especially during take-off and landing). This is different to a drone which doesn't have any own instincts. Therefore, there is a risk that the pilot could loose the control of the trajectory due to focusing on the drone. Drones should not become an additional burden.

Terrorist attacks

A terrorist may intentionally use a RPAS to carry a bomb or a RPAS as a weapon itself. With the ongoing democratisation of the use of drones, this scenario becomes more and more probable and this risk may become real in the short term.

Cybersecurity

RPAS are by definition remotely controlled and this creates the possibility of cyber hijacking. This means that a terrorist doesn't need to buy or build a RPAS but simply hijack one by using a proper software. Such a hijacked drone could be positioned into an aircraft trajectory, especially during take-off and landing.
Moreover, there is a real risk of massive simulaneous hijacking facilitated by trojan virus implementation which could make RPAS a weapon of mass destruction for a relatively low cost.

Third-party risks

In case of a major failure of RPAS resulting in an uncontrolled descent, there is a significant risk of damaging people and/or property.

III. ETF VIEWS

Joint call to safely integrate Drones / UAS into Europe's airspace

The ETF is one of the signatories of a joint industry statement calling for a robust hamonized EU-wide regulatory framework for drones. We fully subscribe to the measures proposed including the need for an awareness raising campaign, registration, mandatory training, certification/licensing, technical peformance limitations, need for in-depth research, measures to integrate recreation drones into the national system and increased enforcement effectiveness. The full statement can be found at http://www.uasvision.com/2016/09/19/joint-call-to-safely-integrate-uas-into-europes-airspace/

Robust regulatory framework

The ETF requests a consistent Europe-wide regulatory framework for all types of RPAS with high standards. Furthermore, we request the removal of the 150 kg threeshold below which the EASA (and ICAO) competences do not apply. This is important to ensure a comprehensive framework for all kinds of RPAS and to replace inconsistent national regulations. We also support the development of common production standards and mandatory labelling and registration.

Drone categorisation

The ETF believes that RPAS should not be categorised strictly by weight but by their capabilities following a risk assesment. Besides weight and payload, an important element to be taken into account are the flying skills of the RPAS (very low weight, precision or static flying, autonomousness, beyond visual line of sight or endurance). The categorisation should include all types of operations, such as leisure drones, commercial/military automated drones or commercial/military remoted piloted drones.

Professional RPAS pilot licence requirements

The ETF supports a mandatory licensing for all RPAS pilots which should imply a security background check above a certain risk level. Except for leisure use of ultra-light drones with a very low risk level, a professional RPAS pilot licence should be required. For low risk level operations, the licence could be replaced by an attestation or a sign up on an EASA ICAO dedicated website or platform. Such licence required to pilot an RPAS should be also required to carry the same type of drone.

Training

Each leisure drone should be sold with an explanation leaflet about the rules and best practices for flying a drone
In case of low risk operations when an RPAS pilot licence is not required, a simplified procedure should be put in place to ensure a minimum level of awareness. Before first take-off, the user has to obtain a RPAS pilot ID

Registration card

Every drone should be registered with a unique EASA/ICAO ID and the holder should have a registration card in a standard format. This data will be stored in a European-wide registry.
Every RPAS user should be able to present a RPAS registration card and a RPAS drone pilot licence upon request by the authorities.

Airspace separation

By default RPAS should only be allowed in airspace below 120 m / 400 ft height and geofenced. When the operation requires entering airspace protected by height limitation and/or geofencing, the drone shall be piloted by a person holding a valid pilot licence and in contact with the relevant ATS unit.
The disabling of the geofencing/height limitation should be subject to the authorisation of a relevant competent authority.
Integration into the ATM system should be done in a transparent manner from an ATM point of view and with the same level of safety as manned aircraft.

Hardware requirements

All RPAS should be geofenced in order to enforce airspace restriction rules and their database should be updated regularly.

Further research

As indicated above, there is no reliable data available yes as to the impact of a collision between a RPAS and an aicraft. Therefore, we believe that there is a need for research to assess e. g. the frangibility of drones especiallz in the case of airplane engine absorption.